



*Journal of the Military Service
Institution of the United States*

Military Service Institution of the United States

JOURNAL
OF THE
MILITARY SERVICE
INSTITUTION

OF THE
UNITED STATES

VOLUME XXXVII



BY DIRECTION OF THE PUBLICATION COMMITTEE.

BRIG.-GEN. T. F. RODENBOUGH, U. S. A., EDITOR.

MILITARY SERVICE INSTITUTION
GOVERNOR'S ISLAND

1905

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1905

WYNKOP HALLENHECK CRAWFORD CO., NEW YORK.

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JOURNAL
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"I cannot help plead to my countrymen, at every opportunity, to cherish all that is manly and noble in the military profession, because Peace is enervating and no man is wise enough to foretell when soldiers may be in demand again."—GENERAL SHERMAN.

Vol. XXXVII.

JULY-AUGUST, 1905.

No. CXXXVI.

NOTES ON PROMOTION.

BY BRIG.-GEN. HENRY T. ALLEN, CHIEF OF CONSTABULARY,
PHILIPPINE ISLANDS.



IN spite of the well-known opposition of soldiers, especially old ones, to innovations or even ordinary changes in customs of the service, the past ten or twelve years have effected much for us in administrative reform and field preparation.

Within very recent times it was un-American to speak of a general staff, war college, general-staff schools, or of maneuvers in connection with our service, although it was obvious to straight-thinking people that they were indispensable in the preparation of the modern game of war. As everyone knows, they have been incorporated in our system in a liberal degree—beyond the anticipation of their early supporters. For these much needed institutions we have to thank certain clear-sighted officers who worked out the plans, the masterful Secretary, backed up by the Commander-in-Chief, who early grasped the importance of these measures, and certain members of the military committee who recognized the practical business aspect of the pending changes.

As a rule the sense of justice, fair play and right to equal opportunities is so strongly developed in the American that it is only necessary to put him in possession of facts connected therewith to find him a ready champion. The army is no exception to this rule.

Do young men selecting the army as a career enjoy a *right to equal opportunity* on a parity with those who go into the law,

medicine, engineering, diplomacy, or other professions or business where advancement depends almost solely upon individual efforts and merit?

Is it *fair play* to yoke vigorous, wholesome specimens of manhood with the weak and non-progressive and say that, regardless of qualifications and endeavors, their advancement must be pace and pace?

Is it *justice* to men who possess superior attainments and who distinguish themselves in their chosen work to refuse them such recognition as would be their right in other walks of life?

And finally is it a good business procedure for the Government to tolerate a system wherein such restrictions obtain?

The army is pre-eminently a business machine (or should be such), and like any other, should be administered on business principles. For its success physical activity is not less valuable than mental vigor. Every incentive to maintain a high standard in both should be assiduously fostered, and the army itself should take the lead in this advance. Rightly, no officer would admit that the army is maintained and trained for peace purposes, nor would he deny the necessity of immediately making great changes in the personnel were hard field-service involving large numbers required. Why should this contradiction exist if we are truly maintaining an army for the purposes which are the fundamental reasons for the existence of all armed forces? The Government has a right to expect much, and if officers do not of their own volition take steps to keep themselves on the highest plane of army efficiency, external action should effect it. The most promising system is based on a full recognition for merit, in which failure to die or resign certainly is a factor, but not the most potent as at present.

When actual war confronts us, the principle of selection is carried to a degree that leaves no doubt that we have been maintaining an organization adapted almost solely to times of peace—totally unlike the successful policy of Japan, which has not changed one of its principal military leaders since the outbreak of the war.

There is not an army officer who does not know among his friends and acquaintances, in the several grades, certain ones who stand out as highly capable, and others whom he knows to be below a medium standard, if not inefficient; the

former, full of initiative, improve themselves continually, while the latter do solely what is ordered, and that with the least disturbance to their comfort. By reason of fitness, the former are called upon to do far more than the latter, especially if the work or the circumstances connected therewith be new or difficult. No one can say that the rewards of these two classes should be coequal, and furthermore no commanding officer will fail, when times require men of head and action, to recommend the advancement of the meritorious at the expense of the incapable.

Long standing customs are difficult of eradication, even when they are known to be based on false principles. Russia knows that the *mir*, the fundamental inferior governmental unit of the land which gives to each one equal material rights, regardless of efforts, is sapping its vitality and radically retarding its progress and development, in comparison with other countries of Europe and with America. The army knows that by continuing the present plan it is refusing a proper recognition of merit to some, is advancing others beyond their deserts, and is fostering a system that necessitates changes in the higher personnel the moment troops are to be mobilized for the defense of the country.*

I am divulging no secrets when I say that a number of officers to-day in command of regiments are unfit both by reason of age and the absence of a non-competitive training for any war position requiring unusual initiative and energy.

*That the long existing discontent and growing disloyalty in our native army might have been discovered sooner, and grappled with in a sufficiently prompt and determined manner to put a stop to the Mutiny, had the senior regimental and staff-officers been younger, more energetic and intelligent, is an opinion to which I have always been strongly inclined. Their excessive age, due to a strict system of promotion by seniority, which entailed the employment of brigadiers of seventy, colonels of sixty, and captains of fifty, must necessarily have prevented them performing their military duties with the energy and activity which are more in the attributes of younger men, and must have destroyed any enthusiasm about their regiments, in which there was so little hope of advancement or of individual merit being recognized. Officers who displayed any remarkable ability were allowed to be taken away from their own corps for the more attractive and better paid appointments appertaining to civil employ or the irregular service. It was, therefore, the object of every ambitious and capable young officer to secure one of these appointments, and escape as soon as possible from a service in which ability and professional zeal counted for nothing. It is curious to note how nearly every military officer who held a command or high position on the staff in Bengal when the Mutiny broke out, disappeared from the scene within the first few weeks and was never heard of officially again. Some were killed, some died of disease, but the great majority failed completely to fulfill the duties of the positions they held, and were consequently considered unfit for further employment. Two generals of divisions were removed from their commands, seven brigadiers were found wanting in the hour of need, and out of the seventy-three regiments of regular cavalry and infantry which mutinied, only four commanding officers were given other commands, younger officers being selected to raise and command the new regiments.—From "*Forty-One Years in India*," by Field-Marshal Roberts.

It is true that they are qualified for a peace organization and garrison service, but that standard is wholly inadequate for leaders.

Under these circumstances it is but natural that the appointing power should seek commanders outside of the army from among men of character whose open and unfettered competition with the world has, in a large measure, fitted them for the emergencies of war. Only when the *mir-policy* shall have been eliminated from the army, and men are advanced in peace in accordance with their value to the Government for war purposes, will the appointing power find leaders at the top better than any that can be obtained outside.

While fully sympathizing with the opponents of a change of the existing system in their principle objection—the danger of political interference and preference—I do not share their views as to the impossibility of eliminating this evil.

At the risk of approving of an injustice to the Government, and for the sake of those who feel that their long service entitles them to whatever promotion the present system may offer, let it be assumed that the new selective policy shall not apply upon its adoption to those in the service above the grade of first lieutenant. But let junior officers and all who contemplate the army as a career fully understand that they may reap as they sow, profiting or failing in accordance with the results of their efforts.

The following extract is from a communication of the undersigned sent through channels to the Secretary of War, on October 17, 1904:

The experience with the corps of constabulary officers in this connection has been very instructive. In the first set of regulations, promotions from third lieutenant to captain, inclusive, were fixed as follows: two by seniority, one by selection. It was hoped and believed that this would be satisfactory.

Scarcely had a year passed, however, when it was evident that this system was bringing up to captains, officers, who though valuable as first lieutenants, were not qualified to fill the responsible positions of senior inspectors of provinces.

The principle so often enunciated that an officer who is qualified for a given grade should qualify for the next higher failed when subjected to a thoroughly unsentimental, businesslike test. It therefore becomes necessary in the constabulary to limit the promotion from first lieutenants to captains solely to selection.

This is truly significant and shows what has always taken place in a less or greater degree in the army when it has been called to the field as the final arbiter.

With the superior school system recently introduced, with the improvement made in rendering personal efficiency reports, and with the establishment of a high-grade, capable personnel in the General Staff the power to properly select has been largely perfected.

The first step in the proposed change would be to determine what percentage of promotions should be by selection. It should be large enough to insure obtaining a sufficiency of high-class officers in the successive grades who would eventually make highly efficient regimental commanders or officers of equal grade, and from whom general officers, worthy of the Government in all respects, would be selected. The percentage should fall between 25 and 50, probably nearer the latter number.

How should the selections be made so as to avoid bringing them within the influence of politics?

My answer is, to have it done by the army itself.

I shall not attempt to set forth a complete scheme, but will merely outline in a general way a plan that may serve as a basis for development: After a few years' service with troops, let the most promising available officers be sent to the service schools, then let the most promising from these schools be sent to the General Staff College, where they may be thoroughly tested in both practical and theoretical work. It is safe to say that the successful ones from this institution might well form the principal element in the lower grades from which the lists for promotion by selection should be made. Those who fail in these trials should not be granted special promotion. Specially meritorious officers of the lower grade who through exigencies of the service may not have been available for such tests, and highly deserving officers of the upper grades, should be put on eligible lists upon recommendation of department (brigade) and division commanders. From these lists the Chief of Staff or a general-staff committee would select and propose to the respective boards described below a certain number of names with records for final selection for each vacancy. To entirely eliminate political bias, there should be established a board for each branch of the service, or a general board composed of members of the various branches to definitely pass upon all promotions below the grade of general officer. Generals would be selected by the President from colonels, and still higher officers from the grade next below.

If the former method were adopted, and infantry promotions were in question, the board might for example be composed as follows, regardless of the officer holding the grades, the third ranking colonel, the fifth ranking lieutenant-colonel; and the ninth ranking major. Analogous boards would be established for the other branches of the service.

If a general board were adopted as suggested above, it should be composed of a larger membership, but selected in a way similar to that suggested for the branch boards.

If deemed more consistent with the appointing power of the Chief Executive, these boards might recommend two names, or even three, instead of one to the Secretary of War for his choice for each vacancy.

It is difficult to see how, under these circumstances, political influence could make itself felt.

The importance of this subject is as great as its antiquity. Probably no state or nation has escaped its consideration.

In the report of the Secretary of War, John B. Floyd, in 1857, occur the following potent remarks:

We have retained another fault, abandoned, at least practically, in almost every service among civilized nations, even the most aristocratic and monarchical. This is promotion by seniority. Age and experience should bring excellence; but the test lies in the actual possession of the latter, and not merely in the circumstances which, it is assumed, should produce it. Seniority, with the requirements essential for position, ought certainly to give precedence, but without these, that dignity and respect which belongs to rank and command can never be secured.

All that has been urged in favor of retaining it with us is the danger of political or personal favor governing a selection. There may be danger from this source; but by the rule of seniority, the worst officer of any army must, if he lives, come to be one of the most important and responsible officers under the government—the colonel of a regiment. By selection it is possible that the very best may not always be chosen, though the choices are in favor of this hypothesis; but certainly the very worst never will be, and this is surely a gain on the present rule.

* * * * *

The army must undergo some such internal change in order to properly qualify itself for the greater responsibility that has fallen to it under the extension of American sovereignty and with the subsequent increase of points of contact with other nations. It is simply a question as to when. Would it not be better to carefully settle a matter of such far-reaching importance to the service now, rather than await an unsystematic

application of the principle of selection when the struggle is on? We are painfully familiar with what takes place under this condition in the hurried appointment, mobilization and transportation of regular and volunteer. Reproach to our intelligence and shock to our pride make this a disagreeable subject to dwell upon.

Just as success in every vocation of life—in schools, workshops, business, and professions—is graded in accordance with talent and endeavor, so should the standing of army officers be determined from the product of their capacity to think straight into the energy of their moral purposes and physical strength.

MANILA, P. I., December 1, 1904.



ENLISTMENT.

BY CAPTAIN H. B. FARRAR, ARTILLERY CORPS.



It is not my intention to criticize existing laws, but merely to express an opinion with the hope that our law-makers may find the remedy for what appears to me a crying evil in our army. Every thinking officer to-day must realize that something is radically wrong somewhere. The number of desertions is comparatively great, while the percentage of re-enlistments is discouragingly small. Few organizations can boast of more than four or five old soldiers, and probably four or five others in their second term of enlistment.

I believe it would greatly benefit the service if something could be done to encourage more good men to re-enlist, and the following suggests itself as practicable:

Under the present law every soldier enlists for a period of three years. He probably remains at the recruiting station for a short time, and is then sent to join his organization, which he usually reaches within one or two months after he has taken the oath of allegiance. The next four months are spent in breaking in the recruit, and in teaching him what the life of a soldier is. Experience has shown that a large percentage of the desertions occurs among the soldiers of about this length of service. The recruit having served from six months to a year becomes dissatisfied, and decides that he does not like the service. He has to look forward to two years or more of a life entirely different from what he expected to find, and a life he does not like. Again, he has been in the army hardly long enough to fully realize the gravity of desertion. He takes the first opportunity to desert.

To partially correct this evil I would establish two terms of enlistment as follows: The first enlistment to be for a period of one year, and all subsequent enlistments to be for periods of five years each. Suppose the first term to be as stated for one year. As at present, a number of men at the end of six or eight months would want to leave the ranks and return to their vocations in civil life. However, with only four or six months more of service to look forward to, they would remain

and perform their duty. It would not seem so long, and an honorable discharge would be worth waiting for, for a few months

Besides, of what value are these dissatisfied recruits to the army? Their worth is nil. Would it not be better to let them go and fill our ranks with new men, to try many and find the best material, to keep, and devote our attention to those who wish to make a life work of it and rise to the higher positions in the enlisted strength?

One year is long enough for a recruit to decide whether or not he likes the life of a soldier, and if, after this period, he decides that he wishes to take it up permanently, then five years is not too long. The total of his first two enlistments would be the same in either case, six years.

Recruiting officers are cautioned to explain to each applicant just what a soldier's life is, but experience has shown that very few understand what the real conditions of service are, until they have actually tried it for a longer or shorter time. Hence many enlist with a total misconception of what is before them. A year would be ample time for the commanding officer of any organization to form an opinion of the recruit. Again many men who are unfit for the service do remain in, and serve out a period of three years. They may not have merited a dishonorable discharge, though their services were poor, and themselves troublesome. So they hang on for a whole term of three years, occupying the places that might be filled by worthier men. Under the system suggested the end of the first year would find these undesirables out of the service and new men being tried. Company commanders should be enjoined to use greater care in noting on discharges if any objection to re-enlistment is known to exist.

This being the condition of affairs on a peace footing many more men would return to civil life with some instruction as a soldier. The instruction would probably not be so thorough as a three-year term would give; still, considering the number of desertions under the present system forming a class not eligible to re-enlistment at any time, there would be a treble increased number who in time of war might be re-enlisted, and who would start with some idea of the fundamental principles of soldiering. The many men who are now deserters would, under the suggested system, form a class of eligible men with honorable discharges.

A recruit for the first year he is in the service is of very little use to the Government. His value is almost nothing as compared to, say, a first sergeant of from five to ten years' service. Still, at present, the raw recruit receives \$13 per month, while the first sergeant of over five years' continuous service receives only \$30, and of over thirty years' continuous service, \$35. A sergeant of five years' service receives \$23, and a sergeant of over thirty years \$28. These are barely more than double the pay of the recruit the first year, yet every officer recognizes their services as being worth many times that of the recruit. A corporal who should be classed as far superior to the recruit receives in his third year \$16, and if a first-class gunner in the artillery, as well, \$18. Are his services to the Government only \$5 more valuable than those of the recruit?

There should be some proper incentive to re-enlist, and to become a non-commissioned officer a still greater inducement. Were there sufficient inducement, more desirable men would re-enlist, and strive to rise. In such cases sergeants would not be made until they had had at least six years' continuous service, and corporals at least three. This end could be best accomplished by increasing the pay of old reliable soldiers, especially non-commissioned officers. I do not advocate an increase in the pay of all enlisted men. But why not reduce the pay of recruits, whose value is small and whose number is great, and give the difference to the older soldiers?

Suppose, for instance, a company of coast artillery, 109 men, one-third of the men in the first year. These recruits are not worth more than \$6 per month to the Government over and above their clothing allowance and rations. That is a saving of \$7 per month. One-third of the company would be about thirty-six men, the average in the first year. That would mean a saving of \$252 per month, which could more profitably be used to increase the pay of valuable men. Suppose this money to be used to increase the pay of eight sergeants and twelve corporals of the company in the proportion that eight sergeants should receive the same as twelve corporals; then each sergeant would receive an increase per month of about \$15.75, and each corporal of about \$10.50. This would be something like the pay each should receive.

Such an arrangement would make an inducement to re-enlist, and even then would hardly be an adequate reward

for long and faithful service and the responsibilities of a non-commissioned officer. Each soldier in his first enlistment would see before him, if he serves well, a position as good, if not better, than his contemporaries have in civil life, and would accordingly do his best to attain the coveted position.

Another point in my opinion is pertinent here. It has been my experience that soldiers are not generally liked or respected by the civilian world. There are many reasons for this. Near all large cities soldiers go to town, and frequently misbehave. If, however, we stop to consider, it will be readily seen that, comparatively, the conduct of soldiers is unusually good. One or two trifling and worthless men will bring contumely on an entire command. Should a soldier be seen in town drunk, civilians will see only the uniform and condemn all who wear it. Should a civilian be seen in the same condition, it is the individual man who receives the odium and not the community at large.

An enlisted man, though he may be a graduate of the Master Gunners' School at Fort Monroe, and is in every way a valuable man to the Government, receives such small pay that it is not possible for him to associate with the class of civilians who are his contemporaries in age and learning. A carpenter or a mechanic in civil life receives from \$4 to \$10 per day, whereas a non-commissioned officer of the army, holding the honorable and responsible position of say, first sergeant of artillery, receives little more than seventy-five cents per day. This would seem to be putting a premium on manual labor. As a result, the most desirable men are often lost to the service, and consequently the outside world receives its impressions of the army from the recruits who are continually joining and deserting. If, on the other hand, an old soldier of long and faithful service were properly pecuniarily remunerated, he would be retained in the service. And after some years of this system at least two-thirds of each organization would be composed of old and tried men, proud of the uniform they wear, and who would not disgrace it nor allow others to do so.

In this way, in a comparatively short time, the offense of desertion would be looked upon as disgraceful by the enlisted men, and it would be materially decreased. Moreover, in thus having a larger percentage of old soldiers, recruits and younger brothers in arms would be taught respect for the uni-

form and good behavior when off duty, and the general opinion of civilians would be changed. The punishment for desertion and the reward for apprehension should be increased. This, in connection with a short period of one year for first enlistment, would practically eradicate the evil of desertion; while a large increase of pay for old soldiers, gunners, and especially non-commissioned officers, would guarantee to us such a set of men as civilians would be proud to recognize in the uniform of the United States Army.



DESERTION.

BY LIEUT.-COLONEL J. W. POPE, DEPUTY QUARTERMASTER-GEN.,
FORMERLY COMMANDANT UNITED STATES MILITARY PRISON.



WITH regard to the subject of desertion, it is strange to mark the threshing over of those issues which had been fought to a finish in what must now be called the Old Army of '70 to '95. This would never have occurred but for the abolition of the admirable system of punishment which had been built up with the United States Military Prison as its culminating point and the substitution of the present guard-house abortion. It is still more remarkable that so many of the precepts which had been studied and had been regarded as settled principles of military penology have been buried into oblivion in so short a period of time. We have lived fast in these strenuous times and another generation of army officers and another army have forged to the front.

From an experience of fifteen years in dealing with the general mass of army prisoners, mostly deserters, and many years of study and writing of that class of criminals, let me recall for the benefit of the younger generation of students of military penology, some of the work done and the principles settled by the older generation. Judging from the annual reports of Division and Department commanders, it is evident that they generally approve of a return to the punitive system subverted in 1895, when the United States Military Prison was abolished.

SEVERITY OF PUNISHMENT.

The large percentage of deserters at the close of the Civil War (and during that war as well) excited the wonder and apprehension of officers in the army then, as at the present time. It seemed incredible that ten per cent. of the American Army should break their oath of enlistment. They felt that this reproach upon the service must be eradicated, and the elementary notion that severity was the only adequate remedy prevailed and was given ample trial.



Some officers advocated absurdly severe punishments, the infliction of which would never have been countenanced by the people upon fellow citizens who had enlisted in the army and had their execution been attempted by the military authorities, a sympathy would have been created which would have nullified the benefit of the penalty. Among such sentences were long periods in a dark cell on bread and water diet, or otherwise, and corporal punishment of various sorts. In general, however, the advocates of severity confined their attention to the length of the sentences and, as there was no limit in this regard to the power of a court-martial in those days, their influence was evidenced by the long-term sentences to be found in the General Court-Martial Orders of that period.

The army had soon to abolish the branding of deserters (See 98th Article of War), but that practice revived in the mark which was afterward made upon the recruit, above the knee, for the purpose of identification under color of vaccination. The drumming out of the deserter at the close of his sentence also sank soon into the oblivion of the branding-iron.

A favorite scheme of the amateur penologists was to make the length of the sentence equal to the term of enlistment of the soldier, under the impression that the deserter would in this manner be deprived of any benefit from his crime, and, in particular, such action would deter the large percentage who desert in the first year of their enlistment.

All the advocates of severity laid great stress upon rigorous treatment of military prisoners. The lives of such criminals as were in confinement must be made as wretched as possible without conflicting with Article VIII of the amendments to the Constitution of the United States, forbidding "cruel and unusual punishments."

It will be recalled that few of those who called for excessive harshness were given charge of prisoners, and of those who were given that disagreeable responsibility, none were ever allowed to put their brutal theories into practice.

In the midst of all this theorizing and experimentation with reference to court-martial sentences, it was apparently forgotten that the number of the deserters captured was so small that the degree of punishment suffered by them could have very little effect on the mass who escaped scott-free from any consequence whatever. The total number arrested was not much more than ten per cent. of those who criminally left the

service. No man, particularly an American of the adventurous class, who enters the military service, would hesitate to run the risk of being the one in ten who is caught, when he has no scruples, and an overpowering desire to escape from an irksome duty. Again, in the early days, as now, when the deserter was confined in the guard-house, his chances of escape were excellent and it was the exception if any long-term prisoner completed a guard-house sentence, nor was it an infrequent occurrence for the deserter to take French leave between capture and sentence. This greatly added to the uncertainty of the punishment. The places of confinement varied from the State Penitentiaries down to the one-post guard-house, and the treatment of the prisoners varied as greatly, and this still further increased the uncertainty of the amount of punishment the deserter suffered even when caught, tried and sentenced.

CELERITY OF PUNISHMENT.

Again while there has never been any great amount of just complaint as to "the law's delay" on the part of the military authorities in the trial and sentence of courts-martial, nor in their action upon the proceedings of such courts, still there were undoubtedly much longer intervals between arrest and sentence of offenders in those days than later, with the consequent danger of escape or of pardon or interference of political or social nature.

The result was at any rate a lack of the celerity of punishment which is almost as essential an element in deterrence from crime as certainty.

The formation of the Summary Court has greatly relieved and facilitated the procedure of military courts.

THE POINT OF VIEW OF DESERTERS.

I once made a study (and those views were published) of the causes of desertion from the point of view of the deserters themselves for which I had ample opportunity. While all who have had large experience in the management of convicts understand the doubtful value of such testimony, still there were certain complaints which had, in truth, some grounds of injustice, and I believe every one of the complaints which had a real basis was remedied. For instance, in the early days if a

soldier was absent without leave for three days, whether there was any indication of desertion or not, he was reported a deserter on the company book and when he came back, the officer making the report often, if not generally, felt obliged by consistency to prefer charges against the man. Many deserters claimed that they had gone off for a frolic, and having overstayed their pass for three days were afraid to return and face a court-martial. This appeared particularly unfair, inasmuch as the officer was not reported as a deserter under three months' absence without leave.

The commander of the Department of the Missouri was so much impressed with this injustice that he issued an order forbidding a soldier to be reported as a deserter inside of ten days which order was revoked by the War Department as not within the power of a department commander. The War Department itself afterward regulated the matter. (See Army Regulation, Par. 131.)

Another complaint of deserters was that they were lured to enlist by false representations (that good old perennially recurring growl), or had made an honest mistake in thinking that they would like the service and had found the restraint intolerable, or their dependent mother or other relative had appealed to them to return and needed their attendance and a hundred other similar facts or excuses. The point of the complaints of the dissatisfied soldiers was, however, that they could not by any means remedy their mistake in enlisting, could not in any way honorably separate themselves from the service. The most important aspect of this complaint was that, as the deserters insisted that any soldier with sufficient influence, political or social, could get discharged without any difficulty, and were able to point out any number of such cases, which could not otherwise be explained, where soldiers were discharged from such company when others could not secure the same result.

It was then pointed out that, if any soldiers were discharged all should be allowed equally the same privilege under such restrictions as might be prescribed by the War Department. The proposition was made that any soldier be allowed to buy his way out of the service upon paying the amount which his enlistment was estimated to have cost the Government.

The basis of this complaint has also been eliminated by

wise action on the part of the War Department (Army Regulations of 1901, Par. 156).

One of the greatest bones of contention was over the question of adopting a graduated code of punishment. I was able to point out that for the identical crime and under no essential difference or criminality the sentence varied from *ten years in a penitentiary*, like Sing Sing, to *one year in a guard-house*. This presented a *prima facie* case of injustice so glaring as to attract attention, and after a long fight for justice the present code has been the result (see Manual of Court-martial). The main controversy over the question of a proper punitive system for the army centered in the struggle for a general military prison instead of the penitentiary or guard-house for long-term military convicts, and this was won at the early date of 1875. From the establishment of the United States Military Prison resulted the above-named reforms and various other reforms concerning the criminal element of the United States Army.

PRESENT REQUIREMENTS.

My object in recapitulating these few efforts made in the past to build up and improve the punitive system of the service, is not to exploit those efforts but to see whether they do not offer some instruction for those who are now taking up anew the study of the crime of desertion and its suppression or diminution.

These efforts should be primarily directed toward the adoption of the principle of the general prison for long-term offenders. Several prisons would be better than one, as reformers do not favor the congregation of large numbers of prisoners in one prison. There would be required at any rate one prison for the Philippines and one for this country, say at Fort Leavenworth, or Fort Riley, Kansas.

I have recently written in favor of the establishment of such central prison (see JOURNAL OF THE MILITARY SERVICE INSTITUTION for July-August, 1903, "Three Stages of Army Penology") and of the evils of the guard-house for the confinement of long-term convicts, and need here do no more than emphasize the contention that the re-establishment of such central prison should be the first, as it would be the most important, step in future prison reform. Furthermore, it would be particularly desirable that action should be taken before the experience gained by the organization and management of the old military

prison is forgotten, so that the methods and practices developed during the two decades of its active existence may guide toward a revival of its merits and an avoidance of its defects.

However, the old saying applies here that one "must first catch his hare before skinning it." It has been the plaint from olden time by the army that the public is wholly indifferent about this crying evil of desertion from its ranks; that it will place no stigma upon the soldier who thus violates his solemn oath, will neither ostracize him or place any contumely upon him. This has always been true and always will be true so far as one can judge the future by the past.

Such a complaint on the part of the officers of the army seems to me utterly puerile and unprofitable. In my opinion after much experience, the public has been quite fair toward the army. It has allowed the War Department plenary power over the punishment of the deserter and has not interfered with the measures devised by the military authorities to capture such absconders. Congress has regularly appropriated the amount deemed necessary as a reward for the capture of the deserter, which has been twice increased. Further than this, the apathy of the American public toward this technical crime is natural and inevitable. The truth is that it is the indifference of the army itself, not excluding company and regimental commanders, and including in particular the rank and file, that is chiefly responsible for the failure to bring a large percentage of deserters to justice. Can the army expect the people to take more interest in the prevention of desertion than the army itself? With fifty dollars reward, and well directed, zealous efforts on the part of army officials, few deserters indeed could remain at large in the United States territory.

This statement is made on the strength of experience which will be related. During the seven and a half years that I was in charge of the United States Military Prison at Fort Leavenworth some fifty convicts escaped from that institution. Of that number about forty-three, or eighty-six per cent. were recaptured. This was the more remarkable because the system by which the success was accomplished was in operation only a few years. The same system was, in all essential respects, adopted in the army (see Army Regulations, Par. 116) and failed to have, even approximately, the same success, and why? There was no real difference between the recapture of the es-

caped prisoner and the deserter; the sentiment was quite as strong in favor of the convicted as of the untried deserter, in the country around Fort Leavenworth, as elsewhere. The difference in the success achieved in the one case and the failure in the other was due to the different manner in which the system was carried out, and, as before said, in the apathy of the responsible officers and the rank and file of the organization from which the desertion occurred.

When a prisoner escaped, some five hundred circulars describing him were sent out to all post-offices in the neighboring towns and in the principal cities, as is now done under the Army Regulations in cases of desertion. The effort did not stop here, however, careful inquiry was made as to the relatives or friends of the escaped man and every bit of information that could be obtained was taken note of. Wherever relatives were located or other persons connected with the individual were known, police officers or detective agencies were written to and urged to take up the pursuit. Any real clue almost certainly led to recapture.

There was no sentiment whatever in the whole business; none was available nor was appealed to; it was business solely. There need be no sentiment as there is an immense amount of money in the capture of deserters and the proper detective agencies have only to be directed upon the right course and deserters will lead very unsafe lives in the United States. Five thousand deserters a year at the fifty dollars reward now authorized amounts to two hundred and fifty thousand dollars, and if such an agency as Pinkerton's would enter the business of capturing deserters, there would be a lot of money in it. When you add the deserters already at large "there is millions in it."

Instead of this sort of effort to capture soldiers deserting, what happens? The rank and file are absolutely indifferent; judging from boards of survey, their fellow soldiers immediately appropriate their effects, and have in so far a slight interest in their not being caught. The company commander generally considers the man's departure a good riddance and does not care to get the nuisance back, which might happen in the event of recapture. The post commander does not care to bother about the affair at all. This was, at any rate, a very general feeling and situation in the old days when I was investigating the matter.

Now with such condition of feeling in the army itself, how absurd it is to talk of the indifference of the American public! The reform should begin with the officers becoming thoroughly aroused to the gravity of the subject, or rather the disgrace of this crime to the army. The officers, particularly the company and regimental commanders, should then impart their feeling of the disgrace to their men.

It should not be difficult to build up such a sentiment among good soldiers. With such sentiment among enlisted men, information could easily be obtained from the associates of the deserter which would lead any good detective to capture him.

While endeavoring to secure the capture of escaped military convicts in the year 1894, I made effort also to induce various detective agencies to take up the capture of deserters. The reward had been raised to sixty dollars and I was myself surprised at the result, for the number of convicts in the military prison swelled from some four hundred to six hundred and fifty, if I rightly recall the figures. There was no fair chance to try the effects of the work fully, for the reward was then reduced to ten dollars, and this would hardly pay the expenses in many cases.

The difficulty of recapturing soldiers who desert has been greatly exaggerated. If the authorities doubt this fact, let some enthusiastic and energetic officer with aptitude for the work be picked out and assigned to this special duty, and I fancy the result would surprise those doubting Thomases who have laid the blame on the American public.

The present system, although carried out without zeal, has certainly borne some results. I have paid right in this city of Philadelphia, some thirty-four rewards in the last six months; it has only been since October last that the thirty dollars for apprehension and twenty dollars for expenses were consolidated, an excellent improvement.

It must be admitted that it would be unfortunate to start such a reform when the many captured deserters would have to be confined in guard-houses and could so easily escape and thus put the Government to the excessive expense of paying the rewards over and over again.

CONCLUSIONS.

The reformer, desirous of stopping desertion and improving the punitive system of the army, should therefore advocate

the speedy establishment of a general prison for the longer termed prisoners (over six months) of several such prisons. This is a *sine qua non* of any just and enlightened punitory system for this or any army.

The head of this central prison should be required to keep himself in touch with various detective agencies, which could be utilized for the recapture of both escaped prisoners and of deserters. Company commanders should ascertain all the personal history that is possible of the deserter, of his family, his friends, acquaintances and correspondents, and every fact bearing on his habits and probable whereabouts. These he should report to the head of the central prison, nor should he or his soldiers stop there but continue the efforts indefinitely, as it is often much easier to capture a man after he has dropped his own watchfulness.

All such facts, and any other that can be learned, should be communicated to the proper detective agencies for their aid in the real work of tracking down the deserters. Such a system carried out with zeal and enthusiasm by one who has the required aptitude, would go a long way to solve the problem of desertion from the army or from the navy.

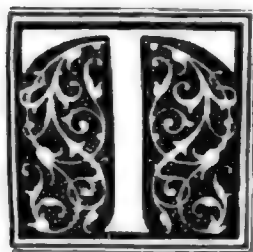
I have been disappointed too often in the effect of reforms to believe that any one system or any degree of activity could entirely eliminate desertion from the American Army. This crime is with the army to stay, and we can only diminish it and mitigate its evil effects.

Whether we can do away with the evil or not, we should firmly endeavor to do full justice to the offender, which does not mean severity any more than leniency, but does require in its punishment the three essential elements of certainty, equality and celerity, which need for their attainment, prompt pursuit and capture of the offender, his prompt trial and sentence, and equitable treatment in a suitable prison where escape is impracticable, or as nearly so as walls can make it.



JUNGLE TACTICS.

BY FIRST LIEUT. LOUIS McLANE HAMILTON, 14TH INFANTRY



THE writer had hoped to find in the new drill regulations some formation prescribed which would meet the conditions encountered in our island possessions, where the character of the country is so entirely different from that at home that movements devised with the latter as a basis, are not as adaptable in the first case as one might wish.

The dense jungle found in most parts of the Philippines renders any formation like our advance guard impracticable, for if flankers were put out not only would they be unable to see any part of the column, or observe its direction of march, but owing to their moving through a pathless tangle of tropical growth, the main body would be held down to a gait of about two miles a day, while its only connection with them would be by the obviously undesirable means of shouting. Then, again, it has been shown that open formations are not desirable here, as shock, instead of fire action is mainly to be guarded against, and especially in the southern islands.

The British Infantry Regulations for 1902, under the head of "Savage Warfare," say in this regard:

"Against an enemy armed with the breech-loader close-order formations in battalion and in brigade are applicable only for assembly, for marches and during the preparatory stages of the fight.

"Accordingly, for civilized warfare, no close-order movements other than column are practiced.

"Attacks by savages armed with spears and swords must, however, usually be met in close order, and for warfare against such an enemy movements in line, echelon and in square will be practiced, in addition to those described in Part III." and their experience in this particular line of fighting is to be respected.

It is well here to consider the character of the country in which the proposed formations are intended to be used, as well as the usual tactics of the Filipinos who are not without resourcefulness in this respect.

The communications are for the greater part narrow trails often bounded by cogón, which is a coarse, wiry grass from six to nine feet high, very dense in growth, and impossible to penetrate with the eye for more than about three feet. Occasionally this, which is the most dangerous from a military standpoint, is supplanted by bamboo thickets, mangrove, hemp-fields, dense brush and rarely open spots. The growths afford ideal concealment for the enemy who may lie within a few feet of a trail with the rarest possibility of being discovered. These trails are formed by the natives, and when leading to the high ground almost invariably follow the bed of a stream, and these, after a rain of two or three hours, are impassable.

Then again, there are generally heavily wooded heights on each side where two or three men, properly armed and instructed, could play havoc with the column below; they could do this without being seen, and to pursue them would be idle.

Very naturally, it will be said that all this might be obviated by the use of flankers, but flankers to be of any value in cogón grass must be at the most twenty feet apart, and in making their way through this growth would hold the column to a march of from two to three miles a day, and it is impossible to accomplish anything at this rate against the elusive native.

Hence, the column is restricted to a single-file formation, and how this is to be divided, if at all, becomes the subject of consideration.

Taking up the tactics of the natives, as remarked during our occupation, and especially those of the southern islands, it may be said that their fire action should not in itself be considered to any great extent; that is, directly.

Primarily, because their shooting is absurdly bad. Secondly, because they have not now, and with an efficient coast-guard service, never will have many rifles. However, upon a column being fired upon, its commander should give his attention not to the fire and the ground in its direction, but to all the other ground; as it is fairly certain that the fire is for the purpose of attracting the attention, and that the real attack will be by bolomen from an entirely different direction. Or again, if the column allows itself to be led on in the direction of the firing the attack may come from a fold in the ground or brush while the command is yet far from the position of the riflemen, taking it more or less by surprise.

Thus a command passing through cogón grass might have its attention attracted by a frontal fire, and while provisions were being made for a frontal attack, it might be rushed by bolomen from the flanks and rear. As an example of the density of the cogón grass, there are many instances where bolomen have crouched in it beside the trail and cut down persons while they were passing, without exposing more than their arm to view in doing so.

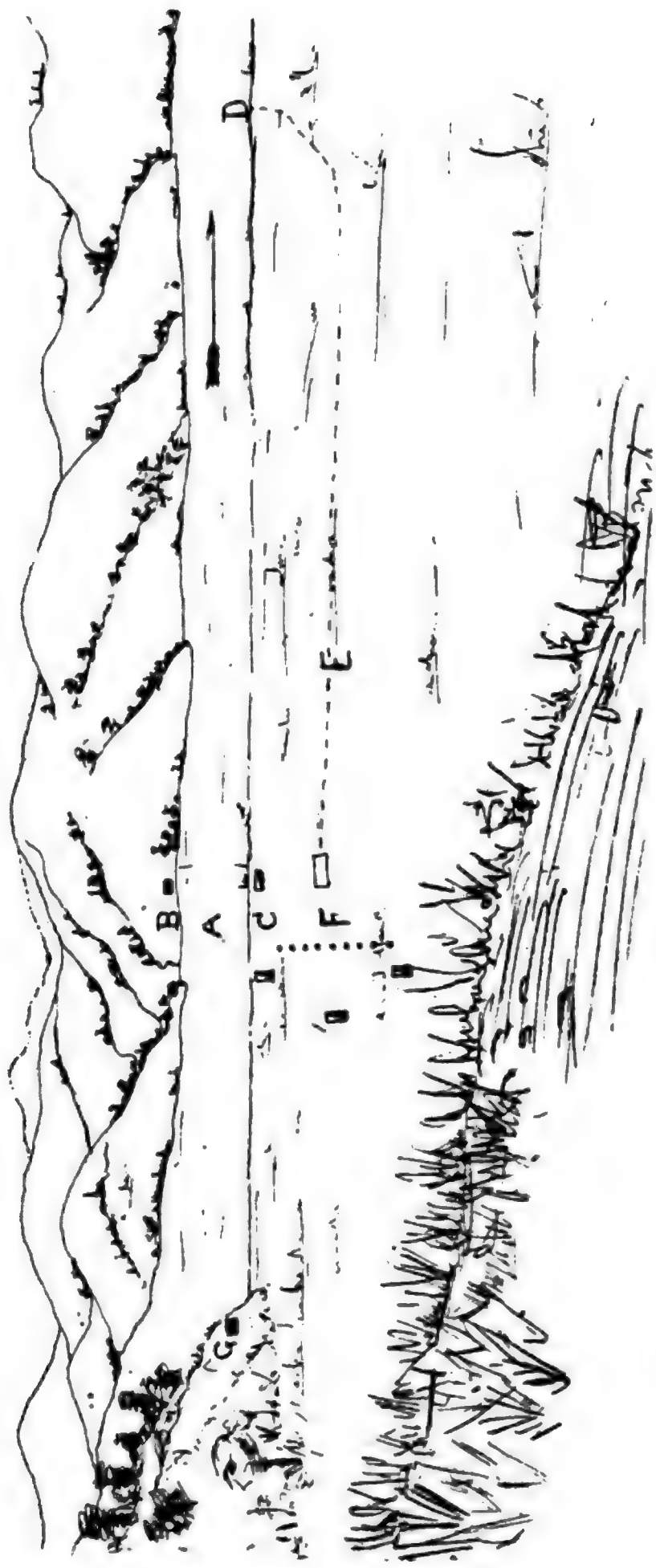
This goes to show the uselessness of the "point," as well as the ease with which bolomen may get between the subdivisions of a body in such a manner that shooting becomes impossible on account of hitting men of one's own party. And this, besides being an argument against dividing the force, is also one against the distance between files being great.

It is, of course, true, that no matter what disposition is made of an attacking force in this country, the defensive may take up such a position that were they properly equipped and instructed, half the battle would be won at the outset. And the terrain is such that it is optional with them to sit in the grass and allow the offensive column to pass unmolested or attack it. It may be remarked in connection with this that the Philippine system of runners, "boujons,"* and "pictics" is such that the strength and destination of a column is known far in advance of it, and that runners are able and actually do watch a column's every movement, which information being transmitted to the enemy, puts them in a position to pick a place for the attack, or get out of the country.

An amusing story in this connection was told me by a member of the constabulary. It seems that this man followed a band of Poulajans several days, upon information given him, and that upon the second day he heard the "boujon" continuously ahead of him, and thought that the trail was getting "warm." This was continued for three days later, when, becoming disgusted, and having been without rations two days, he turned back.

The sequel is that the Poulajans had been in the grass beside the trail, had considered his expedition too strong to attack, and had left one of their number to go ahead and blow the "boujon" in order to lead him into the territory of another band while they calmly waited until he passed and walked

*Native bamboo bugle or the conch shell. Telephones made with hemp which act upon the order of the bell-pull.



in his rear. So that in the event of his going far enough his party would have been subjected to both a frontal and rear attack, not to mention what might have been done on the flanks.

The following is given as an example of Philippine tactics: A party of constabulary were sent down the Gandara River with prisoners. Upon arriving at "A" (see illustration) their boats were capsized by a rope across the river, and they were fired on from "B"; it turned out afterward that there were only two or three rifles at "B," but the men being surprised by their ducking very naturally swam to the other side of the river "C," where they were cut up as they landed by bolomen who had been hidden in the brush.

The following day this having been reported, a body of constabulary landed at "D," and proceeded up that side of the river. At "E" they were fired at from "G," upon which a formation for attack was taken up and an advance made upon "G." They were surprised at "F" by a bolo rush from both flanks and from the front, with disastrous results, which all goes to show what may be expected by rifle fire in the Philippines.

Then there are cases where the different bodies of advance guards have been cut off by bolomen simultaneously, and as fire action could not be employed without hitting their own men they were taken at a great disadvantage.

There are like cases too numerous to mention, and as it is impossible to scout each side of a trail in this country properly, and as the "point" passing a place is no indication that the main body will not be jumped, the advance guard formation simply serves to weaken the command.

The following suggested movements are intended for the use of small bodies not to exceed a company, as that is the force which will be most largely used under all circumstances which are likely to arise:

1. Being in column of squads to form trail column in single rank. *Right (or left) by file or skirmishers. March;* which is executed as in the Infantry Drill Regulations except that the distance between files is forty inches. After this movement is executed the first sergeant and right guard watch the country to the front, each front-rank man to the right, each rear-rank man to the left and the second lieutenant and left guide to the rear; the captain marches at the head of the column. Upon halting, the men face to the right and left, as also resting, sitting down, and may all be caused to face in a given direction by the commands *face to right (left, front)*. Fire may also be delivered

in any or all directions by the command *fire right (left or right and left)* prefixed to the authorized commands for firing.

The advantage of a formation of this description is that no matter from what direction the real attack comes the column is always ready for it.

2. Another formation which could be used with advantage is the time-honored "circle."

Being in column of skirmishers, *circle*. At which command the right guide stands fast, and the first platoon forms a semicircle in double time with the left guide (of the first platoon) on the trail. The head of the second platoon, forms a semi-circle as prescribed for the first platoon, in the opposite direction. Interval between men, four inches.

3. Being in circle. *Skirmish circle*, which is executed by each man moving to his front until he has an interval of two paces from the man on his right.

The circle expanded in this manner may be contracted by an appropriate command.

The advantage of being able to change the circle from one of close order to one of extended order is that it may be used against either shock, or fire action.

The circle may be put in march, the ground permitting, by the commands, *to the front (rear, right or left) march*.

4. Being in circle, *line to front*. The first and second platoons execute change direction to the left and right, respectively.

5. Being in circle, *line to rear*. Executed in the same manner except upon arriving upon the line the men face to the rear.

6. Being in circle *line to right*. The first platoon takes its original position when in file of skirmishers on the trail facing to the right. The second platoon marches to the rear until it is in its position of file of skirmishers and faces to the right.

7. Being in circle. *Line to left*. Executed similarly to paragraph six, substituting second platoon for first platoon and facing to the left.

8. Being in line to front. *Line to rear*. Execute about face.

9. Being in line to front. *Line to right (left)*. *To the rear right (or left)*. *Turn march*. Execute about face and right (or left) turn.

10. Being in any formation. *File of skirmishers march*. Executed by the men returning to their regular positions in column.

When terrain is encountered which admits of it of course the formations prescribed by the Infantry Drill Regulations should be used.

The weak point in operating in this country is the necessity of employing cargadores when on an expedition of any duration. These obviously have to be put in some part of the line which naturally weakens it.

I cannot see how this is to be avoided, but it may be lessened by dividing the cargadores up when they are many, which, although it cuts the column in more than one place, shortens the gap between troops.

CABALYOG, SAMAR, P. I., January 1, 1905.

IN MANCHURIA: THE BATTLE OF SHAKHE (SHA) RIVER.

By GEORGE DE SALLE.

Translated for the Second Division, G. S., from *La Revue de Paris* (January 15, 1905)

By LIEUT.-COL. JAMES ROCKWELL, JR., ORDNANCE DEPARTMENT.

"For the whole thing is to kill them,
Kill them in heaps."—*Jules Ferry.*



OUR inaction had lasted for weeks and began to weigh heavily. Each morning, we asked the same question, "When will they fight?" The advance guard was engaged incessantly. Nearly every day the cannon thundered, but the big battle held off. At Mukden we lived in an absolute calm. To while away the time we walked to the tombs of the Manchu emperors (I met General Kuropatkin there one day), or through streets filled with bustle and encumbered with long files of military trains; we visited the shops and bargained for furs and Chinese curios from Germany.

One bright morning the Russians seemed to be more nervous, and soon a vague rumor was current of a near action on the offensive. This was in the early days of October. I put little faith in the reports. Even the possibility of anything on the offensive surprised me, and I was not alone in this; and how many times, for months past, had I not heard prophecies of every kind, mostly false. A supply of skepticism for every day, "tangle-foot" fly-paper for the summer and insect powder for all seasons, these were the three things always necessary in Manchuria. But the rumors of battle grew to such a size that I began to feel uneasy, so on the morning of October 5th I set out in search of evidence.

I went to the station. My road took me along the platform occupied by the retinue of the general-in-chief. His private car had stopped opposite a tent, in which the ceremonies of orthodox worship were being performed. About the tents were many groups. I drew near, from curiosity, and then I was held by a sight imposing in its magnificent setting and in its family simplicity.

It was, indeed, if I may say so, a family reunion. Under the

tent divine service had just been celebrated. The pope, tall, long-haired and with bearded face, had, at the close of the service, tendered the cross to each spectator; the general-in-chief had come first, then each, in the open air, bare-headed, and on his knees, had kissed the crucifix and exchanged with the pope the embrace of peace. A chant was then intoned by all, asking the God of armies for his help in the approaching attack.

The general-in-chief then proceeded to bestow decorations. He was giving out the last when I arrived. A few troops, a battalion at most, was to march past for his inspection. All waited. The officers, in the clear space between the tent and the car, put their men in formation for the march past. The cold was quite keen, but winter in Manchuria is a joyous winter, sunny and under a cloudless sky, a season which makes one long to leap and run. In that atmosphere of surprising purity, the uniforms of all those officers, gold-laced, striped with red, with blue, with green shone resplendent. Ladies were numerous, Sisters of the Red Cross mostly, and among them were two, infinitely elegant, bonneted in the height of fashion, and young and pretty. I admired their dress, their complexions, rosy with the cold, their sparkling jewels, and I thought of Paris. One could have believed himself in the Bois on a fine day of winter. The talk did not rise above a polite murmur; an atmosphere of perfume, of the drawing-room, surrounded us; the tall forms of the officers inclined forward for hand-kissing.

In front, aside from the little group, and with two aides-de-camp, General Kuropatkin was standing against the railing which skirted the cars. He gravely awaited the march past of the men. His uniform was of marked simplicity. I have forgotten its details, even its color, but I retain the memory of a man below middle height, with grizzling beard, with pleasant features which seemed to show repressed feeling—all in somber garb. Were it not for the visible deference toward him, he might have been taken for a subordinate among his superiors.

* * * The march past commenced.

In columns of fours, loaded like beasts of burden, haversacks and cartridge-boxes banging at each long, heavy step, they passed, and when opposite the chief, with heads turned toward him, they saluted with the hackneyed formula and usual cry: God preserve you, Excellency. They were reservists, men of thirty years. Many of them were heavy in flesh. I recall especially one, an officer, short and fat, who took strides too

long to keep step. Hand to his cap, motionless, the general-in-chief returned the salutes * * * and, if I could not hear it, I could guess it so well, despite the unequalled mastery he has over himself, despite all his power, his voice was moved in answering to this, *Ave Cæsar!*

They passed in a cloud of dust. And these troops, who nine months ago were torn from their firesides, their business, their fields, their mother-country for this country of perpetual revolt, were going to their posts. Oh, brave men! Around me, without ever stopping, the talk went on * * * a polite murmur. * * * The medley of perfumes floated about it, and in the ears of women too pretty, under the cover of the great plumed hats the voices of the officers grew confidential.

The bulk of the troops had begun the advance the day before. October 6th General Kuropatkin was visited by the viceroy, Admiral Alexieff. The interview lasted long, at Mukden station, in the car of the viceroy, who was to set out immediately for Harbin. They parted about noon, and some hours later the general, with his entire staff, took horse and set out to the south.

Next day, October 7th, the foreign military attachés followed, and all available troops moved forward, impassive, splendid. * * * Always the same consideration in all the orders: "Is it an attack?" "It will be an attack!" "An evacuation?" "It will be an evacuation!" At last it was an attack! The enthusiasm was great. The general's order of the day was received with numerous "hurrahs," but my astonishment at this change in tactics was not lessened, and many Russian officers had made me feel their apprehensions. It was reported that the station of Shakhe was reoccupied. It was said that the Japanese were weak along the line of railroad as well as to the west, in the immense plains of the River Liao, where the Russian force could be deployed. I find also in my notes the report, without confirmation, moreover, of a first contact between our extreme left and the enemy. I learned afterward that this was but one of the cavalry encounters which were incessantly occurring. The morning of October 8th it was announced that no general action would take place inside of two days, and indeed the action did not become general until the latter part of the night of the 10th and 11th.

* * * * *

The objective was Yentai, and, secondarily, Liao Yang. General Kuropatkin made the following dispositions: Three army corps, the First and Second Siberian, and the Third (formed in Manchuria of various elements) constituted our left under General Stackelberg. We called it the Army of the East. The First Siberian Corps had originally General Stackelberg himself at its head, and I do not remember the name of the general to whom he afterward gave its command. The Second Siberian Corps was commanded by General Sassoulitch; the Third Corps by General Ivanoff. This Army of the East was to attack the Japanese right flank, opposite the Yentai mines, marching through a mountainous region where the progress of the troops had to be very slow. Having forty versts to cover, this Army of the East started first—I believe, but am not sure, that it was accompanied by about six batteries.

The Russian center and right from the environs of Mukden, where they had been knocking around for weeks, moved in their turn about two days later. The center comprised the Fourth Siberian Corps (General Soroubaieff) and the First Russian (General Meyendorff). The right was composed, from left to right, of the Tenth Corps (General Sloutchevsky), the Seventeenth (General Binderlinck), the Sixth (incomplete—a brigade, I believe—and I have never learned definitely the name of its commander), and finally the Fifth Corps.

I judge the total strength did not exceed 200,000 men, and yet I give it in round numbers, and in my uncertainty prefer to estimate too high rather than too low. The Russian officers—and I would be the last to blame them—were more than discreet as to the numbers of their troops. I do not speak Russian, and how can I estimate accurately these masses of men? On paper it is very easy, too easy! You open an army list and see, for example, that a Siberian corps comprises about 20,000 men; then X, at the head of such and such a corps, has 20,000 men under him. But coming back to Manchuria, you dare not make any estimate without reserving a margin of error of at least 50 per cent. However, the secret was well kept, and my technical inexperience is complete. I will simply say that I know of regiments of only 500 men whose regular effective is 2400 men in the Siberian, and about 4000 in the Russian corps.

Thus the objective was Yentai, against which marched

about 200,000 men. The front extended from seventy to eighty versts, a verst being about four-fifths of a mile. But the Russian forces formed three masses: the Army of the East or the left (Stackelberg), the Army of the Center, and the Army of the Right, and between these masses were two intervals, two "gaps," of several miles each. And these two "gaps" caused, in my opinion, the affair of the Sha, which, in its ten days of fighting, includes three battles, distinct and separate from one another.

With such an extensive front I had to make a choice; as I could not see all and thoroughly, I decided for the operations of the center, and my remarks on the other armies must be only vague. I was in complete ignorance about the Army of the East until the evening of the 12th.

* * * * *

We are therefore three distinct masses. The two wings are to press back the flanks of the enemy, while the center is to hold him in a vise. We are to advance slowly to give the wings time to complete their encircling arc. Then, having finished our concentration, on to Yentai and Liao Yang.

October 10th I left Mukden about noon to join the general's staff at the center. General Kuropatkin was at Erdago, about thirty versts south-southeast of Mukden. I crossed the River Hun by the great bridge of the Mandarin road, to which had been added seven temporary bridges. The cannonading was continuous—I hurried on. The face of my *mafou* (Chinese groom) who accompanied me, was lugubrious.

I went on and on until five o'clock in the evening. I looked at the sun frequently and with uneasiness. The sound of the guns proved that I was quite close up, and I judged it useless to be too near, but where in the world were the troops? On this straight, monotonous road, extending thirty versts, I did not see a soul, at least a European, and all was so quiet and peaceful? Upon their thresholds, when we passed by villages, the Chinese grinned at the foreign devils' garb, or joked at my man. I was, as I understood next day, in one of the "gaps" between our center and our right.

Not a soul! Where to get information or find a sign or a guide! The company I began to desire presently appeared in the shape of a bicycle, which my horse first noted. The little

wheels glittered a few hundred yards away, and the pony took a lively interest, judging by his ears and distrustful gait. In a few seconds he decided that the unknown and peculiar machine was coming too near, and showed his desire to return to Mukden, but I held him in, though with difficulty. It was quite ludicrous, for the officer who was pedaling had courteously dismounted and tried to put his wheel behind him, while with speech interrupted by the pony's capers I launched out by turns in polite phrases to that amiable officer and in abuse of my restive beast: "I am deeply grieved. * * * Be still, you wretched jade." * * *

But I learned news, and found I was almost under the batteries of the Seventeenth Corps. "Nothing extraordinary has occurred to-day. Our position is a good one, and we have even made a slight advance. The village near by is very safe; you need have no fear for the night. Good luck. Good-by."

He left, and in a moment up came another officer, this one on horseback. We conversed, nearly all the Russian officers, especially of the staff, speaking French. He was full of politeness, drew me out a map, and pointed out places; then he suddenly became uneasy. "You are surely not with the Japanese!" I reassured him and set out to find a lodging, for night was coming on.

At the village, my mafou knocked at several doors. I saw clearly, being moreover used to it, that they gave him the cold shoulder. Lodge a foreign devil! I began to use my ordinary talisman. *Fa-goua*, said I several times, and the faces expanded into pleasant smiles, I clasped the offered hands, the little children were no longer afraid; *Fa-goua*. French! Doubtless the Chinese were saying, "This is one of the same race as he who, white-bearded or black-bearded, wears a long gown like ours, who is kind, charitable, gives us clothes, and every morning performs rites before a table on which stands a beautiful painted image with open arms."

The women of the house had disappeared. The room I was to occupy was swept out. I dined and went to sleep.

* * * * *

The morning of the 11th, about five o'clock, I was half awake and congratulating myself over the zeal of my mafou. He was already preparing to boil water for the tea. From my

camp-bed, where I lay stretched out, I heard the water singing and bubbling. I rose and went out. No bubbling, no tea, but plenty of infantry fire crackling on every side, and which, in my half slumber I had taken for the singing of the water. I believe I swore; at the same instant, near-by batteries opened fire. * * * The day's work was beginning. During the night the Japanese had seized a height opposite us, not far from the Mandarin road. It was necessary to move our batteries back, so I had awakened between two fires. My preparations to depart were not delayed.

I pricked to the left, toward the east, across the fields. For an hour, I met few troops. Then at the foot of a hillock I distinguished men and horses. It was a park of artillery. On the flank of the hillock stood some tents. I went to ask information. I received a perfect welcome. No one knew where the corps was I desired to rejoin. But I could not leave like that. Coffee was offered, and was very welcome. It was not hot, and I was fasting. In turn, I tendered my flask of brandy, and we chatted about the Baltic fleet, our constant preoccupation. The battery was in reserve. At the foot of the hillock covered with armfuls of *gao-lian*, the guns waited.

To our left, at the summit of the saddle-back heights, was presumably General Binderlinck with his staff. I resumed my way. Indeed, I could soon see that the height was covered with people. I felt some modesty in disturbing them at such a time; but what was I to do? I presented myself to the general, a superb man, with long white beard. He extended a white hand with very pink nails, and I observed how dirty mine were. "To the east, farther on * * * you will find. * * * Good-by!"

I had acquaintances among the numerous officers about the general. We exchanged a few words, when one of them, extending his arm, said with pride in his voice, "Look!" Before us in the great yellow plain we looked down; supporting troops in close formation, as on parade, were moving toward the firing.

The rest of that day was passed in wandering over the plain, inquiring the location of the general staff. The cannonade thundered without a pause. Toward five o'clock in the evening it redoubled in violence. I ran across my friend, Maurice Baring, who was following a battery from the Trans-

baikal, ordered up to General Kuropatkin. * * * That was in my line. The colonel commanding the battery authorized me to accompany it. Baring and I commenced to gossip. We were happy to meet once more. We had lost sight of each other for some time, and such days one never knows.

We stopped in a village. We occupied a house. In an instant, the court was filled with men, horses and baggage. We both went into an unengaged room. About us, the flies swarmed. We sat down on one of the two *Kangs* (a kind of *stove-bed*); upon the opposite Kang was stretched what we at first thought a corpse. Was it a man, a woman? A face of waxen pallor peered from somber rags and was terribly emaciated with the fixedness of death; the eyes were shut, but a sudden moan came from the white lips, and a bony arm, a skeleton hand, made a motion to push back the hair with the weakness of exhaustion, and it seems to me that Baring then said, "Death everywhere!"

The battery awaits an order. In the court stands a table, and we drink cup after cup of tea. A Polish volunteer, very Parisian (he has in fact done his military service in Paris) mounts to find from General Binderlinck where the action is. The noise of the cannon is terrible, the atmosphere is full of strange vibrations. The order comes: "*Mount!*" and we are *en route*. The winding road is encumbered with endless lines of vehicles, going or coming. From time to time a wagon stops; the driver leaps into the neighboring field, brings back an armful of sheaves of abandoned *gaolian*—so much forage that the "Japs" will not get.

I feel a little feverish. Ah, I wanted to be there, in the battle! I am there now! Each step of my horse carries me a little nearer to it.

At the end of about an hour we stop. The commandant dismounts and we do the same. Baring has just told me about him; a queer man, an artillerist from the line, eaten up by cancer of the stomach, with wasted features; almost unable to keep the saddle, but always wishing to march with *his* men and *his* pieces. He sits at the side of the road, his head between his hands, used up. An officer sets out ahead to prepare lodgings, or rather to try to find them. For this village, in a picturesque flat, covered with verdure, and which we looked down on from the road, will shelter us to-night.

The Polish volunteer has rejoined us. His news is not good. Our right seems to be giving way. * * * I leave Baring who remains with "his" battery and is going to lodge with "his" officers. God knows where! In this village of twenty houses, where a thousand men are crowding, I begin the search for a *fandza* (Chinese house). To my great surprise I find one. I was prepared for a night outdoors. Ah, the *Fa-goua*! The good Chinese even found me two eggs, but my servant broke one of them while bearing them in triumph. General Kuropatkin was, it appears, quite near. The action had extended along the entire line. After having abandoned, the night before, without much resistance, their first positions, perhaps because they appeared too much advanced, the Japanese seemed to outline to-day a beginning of counter-attack. They also passed again from the offensive to the defensive. There was no news from the army of General Stackelberg.

The cannonade and infantry fire lasted all night.

* * * * *

October 12th. Ten minutes' riding at early morn brought me to the next village where the general staff was quartered. How fair it was in color and movement under the rising sun! The fields swarming with men and horses, the batteries thundering with livid flame, in haloes of light smoke, the big bivouac fires, the thick smoke eddying, officers on foot, mounted, rushing in hot haste, all the village lanes filled with carts jolting in the ruts and puddles of water, the swearing of the drivers, the shouts, the flags, the standards floating above the tents, the courts and houses filled with men, horses picketed everywhere, and the splendid light bathing all that feast of Death! I wished I dared think it beautiful. * * *

I suddenly came upon the Red Cross tents. An imposing hospital tent of green canvas towered above the smaller ones; all about moved hundreds of stretcher-bearers. An instinctive movement made me turn aside and I found myself facing the procession of wounded, the lucky ones, who returned. * * *

Upon regular litters, or upon four rifles wrapped about by a cloak, with hurried steps, for time pressed and others yonder were waiting their turn, they brought * * * things. Things without name, covered with wraps from which blood was dripping, torn bodies, in pieces, armless, legless, halves of faces gone—and not a cry. Something took me by the

throat; I was nailed to the spot. I uncovered. I wished I could speak, but where to find words! Even now, in writing, in recalling that hour, the same emotion overwhelms me. It was enough to make one weep.

I leave my horses in charge of the mafou. Perhaps he will disappear with them. They may likewise be stolen. So much the worse! It is still more risky to bring my mount nearer and the prospect of having a horse killed and of becoming a plain pedestrian is not alluring.

My point of observation is all selected. Hardly a verst away rises a series of hills, *sopkas*. They are not above a hundred yards high, but the flanks are steep, and I become breathless in my haste. * * * My choice is fine! I just miss falling over the staff of the general-in-chief. I should have been nicely received! Now I understand why so many horses are browsing on the slope: they belong to the escort. My place as a mere idler is not in the midst of these people at work.

I redescend slowly. Where shall I go? I see red trousers on the next height; the French attachés!

Upon my way I meet a young Russian officer with whom I had had a good time in Harbin: "Have you any cigarettes?" he cries from a distance, and he lights my *papiro* with enjoyment. He informs me that the Japanese on our right took a battery yesterday, in two night attacks, by flanking it. I ask him as to his general impression. He shakes his head. "And Stackelberg?" I say. He moves his arms to tell me he does not know.

At the top, I find the chief of the Spanish attachés, Marquis de Mendigorria (forgive me, Colonel, if I spell your name wrong), and see again with pleasure his bronzed face and glowing eyes. "Where is Stackelberg?" he asks, as soon as he sees me. "Isn't he?" I don't know. We chat for some minutes. Then I join General Silvestre and Captain Boucé. "Hello! you here?" "Where is Stackelberg?" "I do not know, General." Mid the roaring of cannon, both eager for this terrible struggle, Captain Boucé and I exchange a few words, and in five minutes surprise one another by talking of Paris. We remark this and smile.

I soon leave him, lean against a rock, and adjust my field-glasses.

Upon my left, the ridge of heights, irregular, broken, with

dark and wooded valleys, all of stern aspect, arrest the view. There lay the Fourth Siberian Corps. Batteries quite near roared from the foot of a wood, shrapnel were bursting as far to the left as the eye could reach—a light cloud, sudden, mysterious, quite small, like a white ball, spreading gently, gracefully, in slow curves; from time to time came a “brisant,” a high explosive shell containing about a kilogram of melinite, lyddite or chimosi powder (all these explosives are similar); it raised an enormous dark garb of smoke and dust. To the right one’s gaze was lost in the infinite plain, at the end of which, on the horizon, I imagined the Liao River a hundred versts away. Before us stood out, indistinct and bluish, the heights of Yentai and Liao Yang, our objective. A bend of the River Sha gleamed like a piece of ice. A locomotive puffed in the distance. A village was in flames, and everywhere in the clear air, under the radiant sky, the trails of shrapnel darted and showed themselves like a flight of white doves.

Where is Stackelberg? It is he who should strike the decisive blow. Upon him depends the result of the battle. The Japanese, overlapped on their flank, must beat a retreat to save being turned. He marches over mountains, true, but he should be here, now! It is five or six days since he set his troops in motion. There were forty versts to cover, and from his direction not a shot is heard!

I was to learn, much later, that the Japanese in front of him had withdrawn, almost without resistance, from their positions in the first line, but that further on the Russians had encountered real mountains, and formidable intrenched positions, before which they had to retire. Their numerical superiority, great numbers of guns, their bravery, were in vain. The assault was attempted. It was a massacre. From the height of their lodgment some handfuls of Japanese (a brigade with a few guns, I am told), to save their scant ammunition, crushed them with rocks.

It might have been ten o’clock. With my glass, I searched the horizon and the plain to discover the Russian batteries carefully concealed in deep trenches. The pieces appeared as black points. Only the muzzles were visible. Beyond, some reserve infantry, of weak force, on the flank of some heights and with rifles stacked, I did not see a man. * * *

I started to rejoin Captain Boucé. A Russian battery, quite near us and a little to our right, fired without pause.

With the glass, we could see far away its shrapnel burst over an unknown target. From a hill, an officer, standing, gave, from time to time, orders to a man behind him, who then waved two flags, and the battery executed the orders. We followed anxiously the reply of the enemy's projectiles. They fell near our guns, but without much harm; we felt their hesitation, their groping. They burst to the right, then to the left, in front, in rear; then there were pauses, the search seemed abandoned, and I was glad. * * * General Silvestre had joined us, and I remember saying: "Well! suppose they sent a few shots upon our hill!" At the same moment began a startling sight. The Japanese had found * * *

Shot after shot, second after second, the shrapnel burst right over the battery. The spot—just those few yards alone—was literally drenched with projectiles. They came, as if placed by an invisible hand, with a stupefying precision, on the line of the battery, perhaps a yard above the pieces, like hail, or rather like a jet from a steam-pipe * * * I gasped at each new shell, I felt something like a blow in the stomach, and suddenly thought of my friend Baring—he was perhaps down there—and of the hell those men were in! I seemed to see them accepting the challenge, reloading without a stop; with the roar of their pieces mingles the explosion of the hostile projectiles; orders cannot be heard; decidedly the place is too hot; burrowing like beasts in the deepest of trenches, weary and haggard, covered with earth, our men see the ground plowed, scored by the shot, covered by formless débris which were their comrades; here half a body, there an arm, a leg. The dying writhe, shrieking with pain, among the blackened fragments of projectiles. They see and await the end of the storm.

An aide of General Kuropatkin comes up and tells General Silvestre that the commander-in-chief will soon take his post of observation on the hill we occupy. We rise and prepare to leave the place. A queer humming makes us turn our heads. Right upon us from very far off something advances through the air with prodigious quickness. * * * The shrapnel passes with a strange singing, deep and mournful, like the sound of a stormy wind upon telegraph wires—bursts farther on. We gaze at one another. A second and a third follow. They fall behind us in the village below. Ah, my horses! I keep my countenance for the sake of appearances,

but have a great desire to skip out. Next, it is a lyddite shell which bursts at the bottom of the gorge we crossed a few seconds ago. A fragment falls at the feet of General Sylvestre, who puts it in his pocket * * * a cloud of earth and powder rises heavily. An intolerable stench is emitted.

I descend; I am going in search of my horses. I turn around from time to time. General Kuropatkin and his escort come around the hill at a sharp trot. He is leading. A short space separates him from his escort; a "brisant" falls and bursts between him and the foremost Cossacks. * * * In the village the tents are struck with feverish haste. The large Red Cross tent has already disappeared. The conveyances move away in confused masses. In a few minutes the whole village will be deserted.

Two versts back are other heights; one of them, the highest, is crowned with rocks on which a little temple is built. General Kuropatkin is already up there, seated on a campstool, telescope to his eye. It is about noon. I find the military attachés on the height next the post of the general-in-chief. I feel myself in perfect safety now, and utter a sigh of relief.

I had just passed through a painful moment. Once mounted, the village cleared, traveling toward a little wood yellowed by autumn, I asked myself: "Is it now; is it twenty yards away? In a few seconds?" I was in the full zone of fire, and no way to avoid the danger. This mass of animated metal, with clock-work movement, automatic fuse, and whatever else, started, God knows where, had only to be regulated by the "Japs" for the exact distance to where I was, and the thing was done. * * * And I did not desire it done!

The height I have just gained had been occupied by the Japanese a few days earlier. They had dug great trenches there. I enjoy an immense view. The great plain extends infinitely, and I see only yellow fields, villages hidden in groves of trees, which make dark spots. A village, fired by projectiles, is now but an enormous mass of smoke, dragged by the west wind into endless drapery, and I am in the midst of battle.

[TO BE CONTINUED.]





what I have seen and learned of it, I have come to the conclusion that its experimental stage may well be regarded as past. Uncle Sam himself must, in reference to this regiment, by this time, have gained the conviction that the attempt to make of his new Latin-American subjects soldiers which are the equal of any in his employ has proved an unqualified success. This is meant not only as far as discipline, valor, and other military qualities are concerned, but also in regard to patriotism, that most essential ingredient in the make-up of soldierly virtue.

In making this assertion, especially the latter statement, I wish to say that it is based not only on my personal investigation, but on careful information gained from the commander and the staff and subaltern officers of the regiment, to all of whom I am deeply indebted for their kind assistance in gathering the data for this paper.

Before hearing of the regimental body itself, and on the principle that the surroundings and the clothes of a man are a valuable aid in judging his character, it will be of interest to the reader to pay with me a mental visit to the quarters of the men in the large infantry barracks near Morro Castle, San Juan, Porto Rico.

It may be reasonably doubted that in any military country of the world the common soldier is housed in such a roomy, comfortable, and sanitary way as are the men of the "Provisional Regiment" in their palatial quarters in San Juan. The barracks, in size and aspect, really appear like a great palace; far more imposing than that of the Governor of Porto Rico, or, for that matter, than any other building on the island. Next to the splendid military road, leading across the island from the capital on the north coast to Ponce on the south coast, these barracks are the most valuable surviving memento of Spanish rule.

They cost the Spanish Government an immense amount of money in the course of their construction which, probably on the *mañana* principle, lasted nigh unto fifty years. In relation to these barracks and their cost, a story is told of Queen Isabella who, looking one morning wistfully through a telescope over the ocean toward the west, was asked by one of her courtiers as to what she was spying at. "I am trying to get a glimpse of those barracks in San Juan that take so much money out of my treasury," she replied. "But, your



around it, open through great arches to the court and are extremely broad; one part, decorated with flags and palms, serving, in fact, as a ballroom for the officers.

The latter, with the exception of the commander, Lieut.-Col. Chas. J. Crane, who occupies the ancient Casa Blanca, said to have been built by Ponce de Leon in the early part of the sixteenth century, have their club rooms, mess and living quarters in the barracks, which fact, no doubt, adds to the excellent state of order in which everything is kept about the buildings.

The company rooms are spacious, airy, bright, and the comfortable beds are surrounded with snowy mosquito nettings. The kitchens are extremely cleanly, and the food provided is, to a certain degree, adapted to the native taste of the men. Although Uncle Sam does not provide for this, the rations being the regular ones of the army, the deviation toward *garbanzas* and other native delicacies is effected by the sale of surplus provisions not suited to the taste of Porto Ricans, and the purchase, in their place, of such food as they prefer.

A well-equipped ice-plant is attached to the barracks. The bathrooms with shower arrangements are such as to overcome the inherent aversion of the average Porto Rican for bathing, and they are freely used by men who formerly may have looked upon a bath as an unnecessary luxury. I was told a story about a man who wished to enlist in the regiment and was advised by a friend to take a bath before submitting himself to the physical examination. "That's all well," replied the man, "but *caramba!* what if they don't accept me?"

That the native islander of the lower classes, who originally does not incline to neatness and cleanliness in his personal habits, except as to external appearance for the sake of vanity, may be trained in these qualities, becomes apparent while making a round of the company rooms. I was given an opportunity to examine the beds, accouterments and individual lockers of about half a dozen men at random, and found everything in the best of order, from the shining bore of the guns to the underwear and shoe-brushes.

While examining the arms in company of Lieutenant Gambell, who acted as my *cicerone*, he called my attention to the fact, proven by the army records, that there were more sharpshooters in the Porto Rico Provisional Regiment of Infantry than in any other regular troop of the United States.



This in spite of the strict laws which, under Spanish rule, forbade natives the possession of firearms, with the use of which only few of the men were familiar before joining the regiment.

As to the personal appearance of the men, any sojourner in San Juan, whether he has an eye for such matters or not, is bound to notice their fine carriage, tidy uniforms and general military bearing, whether strolling on the plaza of an evening, or marching in columns through the streets in the course of their duties. The great majority are middle-sized, slender, olive-skinned descendants of the Spanish settlers, with only a sparse sprinkling of mulattoes and full-blooded negroes; and quite a number of strikingly handsome, martial faces may be seen among them.

They seem to like their profession, and to take pride in being soldiers of Uncle Sam. One does not need to deeply search for the psychological reasons of their contentment, for there are hardly any. They are more of a physical nature. Uncle Sam providing them with far superior fare and clothing than they had ever been used to in their civilian state, without in return exacting from them too much in the shape of work.

The American patriotism which the Porto Rican soldier shows for the present is more closely allied with his physical welfare in the regiment than with any other cause, and it would be unfair to expect of him, after an allegiance of only a few years, other reasons of loyalty to the United States. Neither has cause anything to do with effect in this case. The *Landsknechts* of the middle ages were only mercenaries, but they served their masters well, and shed their blood in the cause of their employers with the same zeal and willingness as the most fanatic communard could have done in the cause of the French Revolution.

A characteristic keynote to the Porto Rican soldier's feeling toward the United States may be found in the authentic story of a private who, on returning for a visit to his native village, during a short leave of absence, impressed the villagers with his wonderful tale of the generous manner in which Uncle Sam keeps his soldiers in food and clothes. "Why," he said, in conclusion, to some girls, "we live like kings, and have nothing to do but drill and salute the officers."

His loyalty to the United States goes, however, on occa-



behaved than American soldiers," I was told by Lieutenant Colonel Crane. "They are furthermore much easier managed than Americans, being in this respect even superior to our colored troops, who, as every army officer knows, are less difficult to handle than white soldiers. We have absolutely no desertions in the regiment. There are no courts-martial, or, at least, they are of rare occurrence, and only for minor offenses. Cases of drunkenness, so common in American regiments, are absolutely unknown among our men."

Another officer said: "According to my observation—and I have been with the regiment ever since it was changed in 1901 from a volunteer troop to the Provisional Regiment—the original morals of the men, which are rather lax before they enter the regiment, improve considerably in our service by their imbibing American ideas. Concubinage is quite a common practice in Porto Rico, and for that reason we close an eye when our men get married without first obtaining the prescribed permit from the commanding officer."

Watching the drills of the regiment, I noticed that the commands, even by non-commissioned native officers, were given in English. Occasional corrections, however, for example, in the line of formation, had to be made in Spanish, as very few of the soldiers understand more than the strictly military commands in English. They will sometimes attempt to answer questions in this language, but invariably switch off into their native tongue. The knowledge of Spanish among the American officers is, on the other hand, also very limited; a deficiency which ought to be corrected in the interest of the service, as their moral influence with the men is certainly bound to improve with the acquirement of their language.

The uniform and accouterments of the Porto Rico Provisional Regiment of Infantry do not differ from those of other American regiments, with the exception of the dress uniform which consists, for officers and soldiers alike, of a white helmet, blue blouse and white trousers. The regiment, however, is made up only of eight companies of a peace strength of sixty-five men, four of which, under Major Ames, are detached to Cayey, about thirty-seven miles from San Juan, and half-way on the military road to Ponce.

Although there is a goodly number of Porto Ricans who still look askance at Americans and everything American. I



REMARKS UPON TACTICS WITH REFERENCE TO OUR INFANTRY DRILL REGULATIONS.* II.

BY COLONEL JAMES REGAN, NINTH INFANTRY.



THE tactical formations in our new tactics for handling large bodies of troops are numerous and varied, in both close and extended order, and the intelligent tactician will apply them properly. So whether or not they are too numerous makes but little difference. Von Sherff says: "The more extended individual order becomes our battle formation, the more important will practice in close order become." The whole principle is really in having the greatest force at the decisive point. The present tactics, therefore, differ but little from the old formations, except that they are deeper and more extended.

The concensus of tactical opinion is that close order can only be used with advantage to march to the scene of action or to hold the troops in hand for deployment. Extended order is the rule and close order the exception. Hohenlohe tells us that during the preliminary stages of the battle of St. Privat, that the Guard Corps marched toward the enemy in mass formations, due to their excellent cavalry screen. They had an advanced guard with the main body close upon it, and marched in a single column in close order with the artillery in column of batteries in the intervals, and did not form for attack until within reach of the enemy's bursting shells. This is an exception, as it is now well understood that the column formation cannot be used within the range of effective fire.

The line formation conforms to the fight and terrain. The column is suitable for assembly and maneuver formations. The company column is the battalion maneuver formation in the zone of the enemy's fire, and also in the fighting formation. Columns are formed from line for convenience of movement, and for the purpose of again extending in line. The tactics prescribe the different ways in which they are formed for the attack and change of position. The main purpose of the column closed in mass is to keep the troops well in hand for

*Concluded from May number of the JOURNAL.

instant deployment. The column is also a suitable formation for the bivouac and camp.

The infantry in close order has three principal formations—line, column and route, or fighting, maneuvering and march formations.

The troops, as they come up from the route march, are held, as a rule, in this formation in mass during the preparatory stage of the artillery and the long-distance fire of the infantry, and upon the defensive as long as possible. They should, however, be always ready to take the combat formation. The reserve should be held in this formation as long as possible to be sent in to sustain the advance lines, or when the enemy is exhausted. In the presence of an enterprising enemy it is recommended that the masses be kept on the menaced side. A broad front, with little depth within reasonable bounds, is favorable for forward movements.

It is really more necessary for the immediate commanders of troops to know their tactics than the higher commander, who simply fixes the principal points of the movements to conform to his plan of battle, or the part he is to take in it. The supreme commander, however, must understand the characteristics of the three arms, so as to get the full value from them, singly or in combination. Boguslawski puts it pointedly when he says that "The art of handling troops does not consist only in the resolution of the commander to attack in this place or in that place, to march here or there, but also in having a good eye to country, in judging the effect of the different arms and employing the formations which are adapted both to the country and to the arms."

All officers, and particularly staff-officers, unless they have a perfect eye for distances, should know the number of paces of himself or his horse it takes for the front of a battalion and higher units so as to decide promptly on the formations necessary to put troops in position. For example: to carry a front of 800 to 1000 yards it is necessary to put in a whole division, from five to ten men per yard, and that the proper front for an attack is about 2200 yards. To meet these conditions properly it is evident that an officer must be well up in tactics. In the past, when our army was scattered on the frontier, an officer who could handle a battalion well was looked up to as a wonder.

All wars, foreign and domestic, for the last fifty years, have

emphasized the necessity of keeping infantry well in hand. Von der Goltz says "That those leaders will have the best chance of success who bring up their troops to the enemy's in compact tactical units, without having suffered considerable loss. The knowledge of how to do this is gained by a careful study of the terrain of great battles."

Up to this time we have referred almost entirely to close-order formations, but from now on they will be referred to only incidentally to show their relation to extended order, or the combat formation. Let us presume that we have pulled away from the routine or grind of garrison life, to which, as a rule, too much valuable time is given. An able French writer says on this subject that "Once drilled in the manual of arms and the execution of commands, the man to-day will stand in need of nothing further than a practice drill now and then. Marching, target-firing, field-service and combat maneuvers, are the matters which should almost constantly constitute his course of instruction. The routine of the drill should be returned to only for the purpose of recalling them to those who may have become forgetful," and how can this better be done, to recur to the subject again, than in the large camps of maneuver, which should be persistently continued. Von Sherff says: "They cultivate mutual acquaintance between the different crops and arms, to give mutual support and to give officers of all grades the practical experience of what they have learned of offensive and defensive tactics."

In leading up to the combats or battles of to-day, the formations partake of the close and extended orders combined, the former the firing line and the latter the reserve. There are generally three lines; the front line covers the rear line or pursues the enemy, but does not maneuver; the second line closely supports the first, caring for the flanks, extending the front and forcing the approach up to the assaulting point, or driving forward such parts of the first line as may have been forced back, strengthening it to the highest degree when it shows the least hesitancy; and when necessary it relieves the first line. The third line is independent for maneuvering, and under the immediate orders of the commander is used for eventualities, such as flank attacks, to repel counter attacks, and to secure the position and pursue the enemy. The rear lines are habitually kept within supporting distance, the leading lines gain in boldness when this is done with spirit.

But when and how these formations should be taken will depend upon the terrain, with its topographical features, and the experience and quick perception of the commander. Our tactics point out the most suitable formations, and when, as a rule, the deep order should be departed from, based upon the battle-fields of Europe, *i. e.*, extended order for the first line, and in order, perhaps the company column and masses. Columns side by side generally deploy when they come within range of the enemy's artillery. It requires well-disciplined troops to keep the close order under fire. The Germans, in 1870, under the protection of their artillery fire, moved forward within the range of the enemy's artillery fire, which was only moderately good.

Let us observe that the most recent experience, including the present war in Manchuria, sustains previous experiences since 1870, that the troops attacking must be superior in numbers and guns, and must go in to win and not fear losses.

It has become an axiom of war that the point to be attacked is the flank, as the frontal attack is almost impossible, except in the case where the enemy occupies too much front or he is inherently weak. What a fine example of this the Japs have given us in their crossing of the Yalu, the study of which is a liberal lesson in the art of war. They have evidently studied the Germans in the War of 1870, General Ghourki, in his passage of the Balkans, and General Sherman in his Atlanta campaign. Their tactics were to threaten the enemy's front by engaging their attention with a fire of the skirmishers and strong supports in near-by shelters, and then by turning their flanks to compel them to fight at a disadvantage or retreat. These masterly soldiers have given us valuable lessons in strategy and grand tactics in perceiving the weak points and making proper dispositions preparatory to battle, and during the battle, so as to bring the mass of the troops against the weak parts of the enemy. They simply carried out the Napoleonic idea of holding the masses well in hand to be ready to strike at the opportune moment.

It is a serious mistake, and generally meets with defeat, to attempt serious movements within effective range of the enemy's guns. Such movements should be done under cover and with the greatest rapidity. Flank movements, and a few of them of a very serious character, have been made in every war. Jackson at Chancellorsville, which turned victory into defeat.

How Jackson could make such a movement with such an army is a mystery no longer; it was simply due to laxity in security and formation. Von Sherff says: "These movements will never be favorable to success if attempted by an oblique movement under fire, or by a change of front after you are already engaged. Straight to the front, 'forward' is the word of command suited to the attack."

It is claimed that flank movements may be successful if properly guarded on the side of the enemy. Such movements are often employed to turn an enemy's position. It will not do, therefore, to sleep on post with an active enemy around. Remarkable examples of this may be found in every war. Security and information is of the greatest importance.

We are fully satisfied from our experience in the West, in operations against Indians, and more recent experience in war, that scouting, not in the narrow but important sense of tactics in extended order, the grand scouts, but in the much broader sense of reconnoitering, will be of paramount importance on account of the fire-swept zone in all future wars. It will be necessary to feel the enemy and get at his purposes, not specially in organized bodies, but like Indians, the best natural scouts in the world. It will never do for massed bodies to go within decisive range, which means annihilation against a concealed enemy, frightful examples of which we have had in almost every war. Nor will it do to take the extended order until the ground in front has been explored, because the authority of the regimental and company commanders is gone, and success is in the hands of the commanders of small detachments.

Scouting, in the sense in which it is applied in our new tactics, is concisely referred to with hardly any explanation, much being left to general professional reading. Of course it is understood that the drill regulations are only the expressions of general principles, great discretion in active service being left to the judgment of officers as to details; and in this we may learn much from foreign armies. They cultivate the initiative in their officers, and allow a wide latitude in the training of troops. They avoid all variations from simplicity and naturalness, all adherence to fixed forms and pedantry, especially on points of tactics.

The men selected for this line of work should have excellent eyesight, be intelligent, active, good shots, and good marchers

—in a word, good huntsmen and soldiers. The Germans and Japs give good examples. The men should have some special instruction and training, besides all that taught to the men in extended order, such as estimating distances and the strength of bodies of troops seen afar off; and also in those specialties for battle, such as moving within a fixed zone, and availing themselves of the most favorable conditions, reconnoitering the enemy's defenses, and how to transmit the information that they have secured. The enemy in this line of work may be outlined, and the exercise should take place on a variety of grounds.

Recent changes in drill regulations of foreign countries have given this matter much and careful attention. Because of the difficulty mounted men experience in reconnoitering the enemy's position, only well-instructed infantry scouts, who profit by the smallest accidents of the ground, are employed to crawl up sufficiently to a position to obtain reliable information, and to avoid surprises.

The present tactics prescribe a few instructed men to act as scouts to precede the company. In foreign armies about one to a platoon. They should be most vigilant, should maintain themselves within the zone of fire of their companies, and should drive back the enemy's scouts. They should never lose sight of their objective, grouping and extending according to circumstances, and when temporarily forced from their direction they must retake it as soon as possible.

In our tactics the number of scouts thus sent out is left to the judgment of the officer. They should be numerous enough, however, to cover the fronts of their companies and support the scouts of the adjacent organization. In important cases they are under the charge of an officer or non-commissioned officer. Our tactics prescribe that upon reaching a position about 1000 yards from the enemy, they hold such position and await the arrival of the firing line. The distance the scouts are sent out to cover the troops varies from 1200 to 1900 yards. Of course these are only approximately correct, as much depends upon the enemy to be engaged, the nature of the mission confided to them, as well as any eventuality or character of the ground. Connecting patrols should be used between the scouts and the firing line, and the other lines in rear when necessary, to send in important communications. These affairs are usually determined by the captain, especially as to

distances or the points to be occupied on sheltered or broken ground. Care should be taken that they are not put in a position to be surprised, or beyond the support of their company. The scouts should try to develop the enemy's artillery, and the position of the infantry, and keep them guessing.

There is much merit, we think, in Captain von der Goltz's idea of independent patrols, not as an habitual form of attack, but upon proper occasions. He proposes eight marksmen for each section, in a German company a total of twenty-four marksmen. In this country we would suggest independent companies, principally of men from the West and South, whose habits naturally prepare them for this kind of work. Their duty is that of screening the main command, to ferret out the enemy, reconnoitering his position, and to guard against surprise and ambush. It is claimed for them that owing to the smallness of the target which they present they can easily approach within 600 yards of the enemy, and concealing themselves, can open fire on the enemy. In the meantime the staff, from the high ground, is reconnoitering the enemy's position, and the different lines in rear are advanced with the utmost rapidity to within 600 yards, from which a vigorous attack is made in the usual way. A system of this kind might have been of advantage in Cuba and the Philippines. Of course the men selected for this work must be hardy and brave and good stalkers. The recent papers referred to a case where a few Japs, a patrol, traveled 250 miles, crossing the Russian lines, and getting within 200 yards of their positions. We all know what was accomplished by the Prussian officers' patrol in the war of 1866.

No matter how well a plan may be conceived and dispositions made, they are apt to fail if the leadership lacks energy. The formation must be suited to the circumstances, the attack concentrated and carried through with energy. The skirmish line, thickened to the fullest, must be gotten to the enemy, and the lines must be arranged with that idea in view; there must be no turning back. The Japanese have given examples of this. A French general, in referring to this point says: "The assault must be made as heretofore, that the troops for this work must accomplish the final end by shock, and that to this end a certain density of formation is necessary; heavy losses in these troops will be inevitable, but the position will be carried, and will be carried in no other way."

As the march in close-order formation is more fatiguing than extended order, it ought not to be assumed before it is necessary. According to von der Goltz, the solution of this is no easy matter, because, besides other qualities, it requires careful calculation of the time, space, depth of march and the marching capabilities of the troops. The important thing to keep in mind is the evolution for battle so that the command may change in time from close to extended order.

The masses should be so arranged that the enemy can not get between them. The Franco-German War presents examples of this where the enemy approached in such a way as to compel each of the separate columns to fight a battle, being out of support of each other. The Japanese gave an example of this in their line at Liao Yang, but the Russians failed to take advantage of it. This fine piece of strategy and tactics was wisely exercised by Napoleon, and nearly always wins out with superior numbers. Another pretty well established rule is that deployed infantry should receive the attack of cavalry without changing its formation at the time. Groups should not be resorted to except as a last resort.

The improvement in firearms and recent experiences have forced deployments to be made at greater distances from the enemy. Our tactics point out these distances beginning at 2500 yards. In recent maneuvers, abroad, deployments in a few cases have been made as far back as between two and three miles. It is while thus deployed and advancing, and the fire is hot, that the men take advantage of the ground and intrench, because it is now, when the defenders in the lines are being reinforced, that they try, by a heavy fire, to annihilate the firing line, using volleys as far as possible, holding the rapid fire for the supports. This is a trying time, and its seriousness has been demonstrated by the belligerents in Manchuria. There are numerous instances in this war where men have crept on their knees with head closely bent to the ground, to get a favorable position for the charge. Our men get but indifferent practice in these affairs.

In European armies, until the men are well within the decisive range, the movement forward is deliberate, with very little rushing. But from there on the movement is rapid and vigorous, the different lines mutually assisting each other when in a most vigorous and persistent assault. Call to mind the terrific assaults of the Japanese in Manchuria. Maude

says: "The troops who can stand the most drilling under fair conditions are the ones who will meet with success. Constant attempts at concealment will give indecisive results." The enemy can not be expelled from his position by stalking him, and a vigorous assault is indispensable. Americans, who are unquestionably among the most intelligent and bravest fighters in the world, must ponder over this idea. The better we are prepared, the less will be our loss in future wars.

There is really no fixed place for the reserve; it may be in the center, on one flank, or on both flanks, but as a general rule it is in the most important place, according to the judgment of the commander. When in doubt, the middle is the best place.

The advantages of extended order are that it allows the most effective fire and the rapidity of movement over rough ground. It stands to reason, however, from its extent and freedom, that it requires the strictest discipline. The Japanese in Manchuria have shown the importance of this. The way they screened their movements and attained their position for the final charge have never been surpassed. Everything was worked out in advance and carried through with precision, the subordinate commanders and the men doing their full part. Their example shows that the men must be taught to obey commands with the utmost precision and rapidity, no matter how given. The officers must be among their men directing or leading them, and their commands should be given by trumpet or signal, as the human voice cannot be heard in the noise and clatter of battle. It is under just such conditions that fire discipline shows to advantage. This was pointed out in a previous article.

Fire discipline and how to shoot is, therefore, of the greatest importance. It is gratifying to know that a decided move is being made to teach shooting to our organized and unorganized militia. Every military man should be taught to shoot with deliberation, and fire only when he can make his shot effective, generally, only within the decisive range, and then with the greatest intensity consistent with the supply of ammunition. He should take one of the prescribed military positions. In foreign armies the lying-down position is the exception. It is well known that the impulse of the soldier in his first battle is to fire without aiming, and frequently without seeing the

enemy. This was a common error in the Philippines, even when the bamboo was not combed. These remarks accord with the idea that the principal factor is the man and not his armament—nerve when aiming the gun—"the man behind the gun." The Germans require their men in advancing under fire to estimate the distance of the enemy for correct elevation and direction; to fix sidearms particularly while lying down; to rise quickly at the command, and to cease firing at the sound of the trumpet or signal. This is also the spirit of our tactics. The athletic training the men receive in time of peace in the way of jumping, running, climbing and scaling walls will admirably fit them for this severe work. The preparation of the Japs in these things accounts to some extent for their successes over the Russians, the difference between them being about the same as between light cavalry and dragoons. The Russians had too much impedimenta in camp and on person.

While much is expected of the officers, the men must be brave, self-reliant and intelligent. It has been stated that poor skirmishers will not advance, but will fire from behind trees, ridges and walls, doing but little damage. They must move forward with the greatest vigor. In their advance the Japanese held on to every inch of ground, sturdily advancing until they attained the position for the attack, and they were generally successful. The only chance of success in an assault, according to General Skobelev, is by successive assaults of skirmish lines. The commander must place himself behind the skirmishers and reserve, where he can feel the pulse of the battle and where, with his troops well in hand, he can judge the moment to send in his reserve battalions.

It is now more difficult than ever to give a proper direction to the lines and reserve and to handle them properly, because of the improvement in firearms, the cavalry screen and the consequent difficulty of guessing the dispositions and intentions of the enemy. The Germans have recognized this, and the Japanese, in their present war, are following in their footsteps in assuming the offensive at all cost.

In order to get the full effect of the range and rapidity of fire of the new firearms, the number in the fighting line is increased and the line extended, hence the reason that the company and battalion reserves only exist at the beginning of an action, and are entirely absorbed before the enemy is seen, and this accounts for the company reserve being done

AN AMERICAN UNIFORM FOR THE UNITED STATES ARMY.

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OUR uniform has recently been revised and is not yet fully adjusted. Some day it may be revised again. The following thoughts in anticipation of this contingency are based on the idea of working up a uniform from fundamental principles rather than by copying from foreign armies whose requirements are generally not the same as ours. In the past we seem to have done a good deal of this copying. Whenever one foreign army has whipped another we have generally adopted some item of the victor's "get-up," apparently with a view of absorbing with it some of his victorious qualities. The military prestige of the French, due largely to the genius of Napoleon, dominated our ideas of uniform for many years. It made our men fight on the torrid plains of Mexico in clothing which, while doubtless suitable for troops watching Germans across the Rhine, was a poor outfit for the tropics. The French chasseur cap, which we used till about 1872, had many serious defects, but the victory of the Germans in 1871, brought us something worse, the unmitigated helmet. Even some impressive German autumn maneuvers, a few years back, seem to have been responsible for our recently discarded elastic gaiters without tips. The Germans are a great military nation, but that should not compel us to adopt their shoes, in the manufacture of which they are somewhere back in the Miocene period, while we, as a nation, are the leading shoe-makers in the world.

When the Russian has been driven beyond Lake Baikal, or the Jap expelled from continental Asia, we may confidently expect that our devoted soldiers will be called on to wear some part of the Japanese or Cossack outfit, according to which turns out to be the winner. It is to ward off, if possible, such a contingency that this production is penned.

To get down to first principles, the question naturally arises, what is a uniform for? At first glance it might appear



to be a rather unimportant matter, but a little thought will indicate that the uniform is one of the most important things with which military authorities have to deal. A proper uniform serves to distinguish us from the enemy. It indicates rank and branch of the service at a glance, being in this and analogous respects a tremendous aid to organization and discipline. It attracts suitable men to the recruiting office, and increases the morale and soldierly qualities of the entire organization. Upon it depends, in many ways, the health and efficiency of our soldiers. To secure in the highest degree the full development of these functions is worthy of the most profound study.

Omitting any further reference to the general subject, let us consider the matter of an ideal uniform for our army under modern circumstances. The conditions that such a uniform should fulfil seem to be about as follows:

1. It should enable us to distinguish our own men from the enemy. In ancient days gaudy colors and striking effects were used, and neither side could make any mistakes with the short ranges then possible. At the present time, on the other hand, concealment is a great object, and we gain a decided advantage if the enemy at long range shoots into his own men or refrains from shooting at ours through mistake. Hence, our uniforms should be for our own information and not his, except, possibly, so far as enable him to distinguish medical and other non-combatants.

2. It should be as inconspicuous as practicable. This applies primarily to the field uniform, but is not wholly inapplicable to the pomp and circumstance of full dress.

3. It should be "smart" and attractive to the eyes of the gentler sex. This is by no means an unimportant matter. The qualities that women admire are the qualities that the race will develop and if that admiration be for the qualities that make good soldiers, better men will seek the ranks. A suitable uniform is, therefore, in this respect, a matter of very great importance.

4. So far as is consistent with the other qualities, its cost should be minimum. This, too, is no trivial matter. The addition of an article costing only two dollars to each uniform means, for an army of 500,000 men, an extra expense of \$50,000 annually for an indefinite period. This, capitalized at 4 per cent. means \$1,250,000. The requirement in our army that a major's full-dress coat shall have nine buttons in a row, instead of the seven it had when it covered a captain, causes the

Government enough useless expense annually to about pay the salary of an extra captain or two. The cost of the recent rapid changes in full-dress coats, in shoes, box spurs, shoulder knots, caps, etc., would pay the salary of a few extra general officers for several years. That such expense falls primarily on the officer is of no moment, for it ultimately falls on the Government, since the majority of intelligent men who give their ability and their lives to the Government service, do so, at least partly, in exchange for the net income they receive. Therefore, all that part of an officer's salary spent in paying for useless articles or changes in uniform is, in the long run, merely so much government money wasted.

5. It should preserve the health and comfort of the wearer and enable him to develop his strength, activity and endurance to the highest degree. The reasons for this are self-evident.

6. For citizen soldiery like ours it should follow the lines of civilian clothing, except where a real necessity requires that it deviate.

In giving these principles practical application, in the development of a suitable uniform for our troops, the following points are worthy of consideration:

FOR THE SERVICE UNIFORM.

Color.—Concealment at long range is now a vital matter. The color that blends with the landscape most effectually is the best. This, of course, depends upon the background. Among green fields, green would be the least conspicuous: on a snow-covered hillside, white would be the best. With an autumn landscape, dead grass color, or some shade of tan or brown, would be the most difficult to see. But our soldiers cannot change their appearance like chameleons to suit the varying background. At present we have adopted the khaki, or mud-colored cotton uniform for the tropics, and a mixture of olive-green and tan wool in two weights for the United States. Both these colors cannot be best. The khaki was copied from the English-Egyptian service and olive-drab came from experiments of our own. This last was on the right principle, but it is not yet certain that we have the best color. In its selection it is understood that only a few comparative tests for invisibility were made and no consideration was given to the principle of giving a smart effect to the uniform.

It is not impossible that further experiments would develop a color better for concealment, and at the same time,

more attractive to the eye. Something could be sacrificed to the latter consideration, for, while concealment is a very desirable feature, a soldier ought not to object being seen once in a while. It would be desirable, too, to get a color that could be produced in cotton as well as wool, because there are many conditions of climate where one man would require woollen clothes, while another would be better off in cotton. Questions of practical dyeing may interfere with it, but a single distinctive color is very desirable for the above and other reasons, and an effort should certainly be made to attain it.

Probably the best guide in nature to the exact shade that is the best for concealment would be the color of those wild animals that depend for safety on flight, or, perhaps, more appropriate for soldiers' use, the color of those wild animals that run down their prey by daylight, and must make an invisible approach. The result is the same either way. The gray rabbit and the gray wolf are nearly of the same color. Doubtless, somewhere, between that color and the olive-drab, the best shade will be found. It is worth further and elaborate research.

Materials.—The only two materials for uniforms that have ever been found suitable at reasonable cost are cotton and wool. Apparently, a greenish cotton mixed with a tan wool might make a satisfactory material. Should experiment indicate the desirability of a summer or tropical color, and a winter color, the proportions could be varied, giving a greater amount of cotton with a greener effect to the summer material. The recent adoption of thin wool for warm weather in the United States will probably not prove satisfactory. A thin woollen garment loses its shape easily, tears too readily to stand rough work among briars, etc., and is not so cool as cotton goods. Most objectionable of all, it cannot be washed without shrinking.

Insignia.—At present we have a rather heterogeneous mixture of totems, heraldic devices and alphabetical abbreviations to indicate organization and rank. They are arranged without much system, are incongruous in some respects, and doubtless could be improved by careful revision.

The following principles would appear reasonable, should such revision take place:

1. The distinction between a commissioned officer and an enlisted man, and that between a non-commissioned officer

and a private, and if possible, the exact rank should be unmistakable up to such distance as commands or other directions are practicable. Beyond that, such distinctions should not appear to the naked eye. This last is to prevent the enemy's sharpshooters in battle from picking off the officers. It is not practicable to prevent him from distinguishing officers by the use of telescopes or field-glasses, but this is offset by the fact that the same man cannot use a field-glass and a rifle at the same time.

To fulfil the above condition requires that the insignia of rank should, in all cases, appear on the same part of the person, so that the enemy could not pick off the officers by the location of the device. At present, in our field uniform, we place the insignia of rank for a commissioned officer on the shoulder of the blouse, on the cuff of the overcoat and on the collar of the shirt. It would be an advantage if it could be found always at the same place. Some uniformity in size would also appear desirable. At present the rank indication of a lieutenant-colonel, as shown by the blouse, can be covered by a three-quarter inch circle; on the overcoat it has about seventy-five times this area. One of these sizes must be ill adapted to the purposes of a field uniform, and so long as black braid is used on the cuffs, the value of an inconspicuous color for overcoats will be partly lost. A field-officer's sleeve braid certainly furnishes, at present, a fine bull's-eye up to at least 500 yards. A second lieutenant in his overcoat is now hard to tell from a private. A further objection to the braid indication of rank is that it is difficult by it to determine the exact rank even at a short distance. This is true of both field and full dress.

Apparently, the best place for rank insignia is the top of the shoulder. The smartness of any uniform is increased by an addition at that point. It is visible in nearly every position, and has been thoroughly tried and found satisfactory. The piling of possibly three sets of insignia above one another, on shirt, blouse and overcoat, is a seeming objection to the above suggestion, but this is easily overcome by the use of a suitable material for the insignia. It is no remedy for the trouble to remove the overcoat insignia to the cuff. If any have to be removed from the shoulder, it should be one of the underneath ones, there being no apparent objection to adding any amount of insignia to the top garment. Moreover, the

shoulder is about the only place where a meaningless strap can be added to a private soldier's coat without appearing meaningless, and *something* should appear on all uniforms to prevent the enemy from making targets of the officers. The non-commissioned officers' chevrons are conspicuous where now located on the upper arm. If there is any objection to placing their insignia upon the shoulder, then something should be added to the uniforms of officers and privates to prevent the non-commissioned officers' chevrons serving to distinguish them to the enemy's marksmen.

2. The insignia, to denote organizations, can always be placed upon the collar of the coat, as now. Upon the shirt, when worn without the coat, it should, if possible, also be placed upon the collar. To facilitate this, there seems to be no reason why both the coat and the shirt should not be constructed with standing collars. Many enlisted men wear the blue shirt with the collar turned up and held in place by one of the points being pinned neatly across the throat. A non-shrinking collar could be fastened with hooks and eyes just as readily as the present khaki coat collar is fastened. By the addition of suitable pockets to the shirts, it might be possible to do away with the service coat, which would mean a large saving in money, and an appreciable saving in bulk and weight.

Materials of Insignia.—The present bronze insignia have the objectionable features of soon wearing bright and glistening in the sun. Those on the sleeves of the overcoat catch on brush, etc., and get torn off. Apparently, leather, celluloid, or "vulcanized fiber" could be used to advantage in place of metallic insignia.

On the woolen uniform there would seem to be no objection to leather insignia. It is light and flexible, would look well and could be carefully adjusted in shade so as to be visible for a short distance and invisible to the enemy. As such garments do not have to be washed, the insignia could be permanently sewed in place. On wash garments, wash leather, or some kind of vulcanized material could be available that could be removed, or that would stand washing.

Shapes of Insignia.—There are some objections to the present forms. They vary too much in size. If the artillery crossed cannon are the right size, the commissary crescent is much too small. Simple shapes are best. The quartermaster's mark is too conspicuous.

Suggested Plan.—For service insignia, in accordance with the above ideas, the following is suggested: Place on the coat of the private soldier a strap of the same material as the coat, but of suitably different shade, fastened to a button near the collar like the present strap. Widen it on a suitable curve near the shoulder seam, so that the insignia of commissioned rank can be placed near both the forward and back edges of the widened part near the seam, so as to be visible from both front and rear, as well as from either side. Revise these insignia to make them each of about one square inch in area, and depending on shape alone to distinguish the different grades. Make the insignia of leather or similar material of the color of the uniform.

Similarly for the non-commissioned rank. Sew into the same shoulder seam a piece of the same material as the strap above described, exactly similar in shape to the sleeve itself and closely covering its upper three inches. Upon this place curved bars of leather, or similar material, of the color of the uniform and half an inch wide, convex upward—one bar for a corporal, two for a sergeant, with a half-inch space between. Add below the first sergeant's lozenge, etc. All individuals will then look alike at sharpshooter's range, while rank will plainly show where it is needed, and no radical departure will have been made from the present system.

Headgear.—The various monstrosities that soldiers have in the past been required to wear on their heads almost surpasses belief.

In the days of broadswords the equivalent of an iron kettle may have been useful as a head-dress, and at times something to make the wearer look fierce and military may have been useful, but now the conditions are different. The important part of the fighting will take place at ranges where the expression of the head-dress will be of no consequence. Much of this fighting will take place behind earthworks where hats will be useful in inverse proportion to their visibility.

The conditions that a field hat or cap should have seem to be:

1. Invisibility.
2. Good eye-shade.
3. Ability to stay on.
4. Protection from rain.
5. Smart appearance.



UNIFORMS OF TO-DAY.
Reproduced from H. V. Herald.

These are about in the order of their importance. The first requires a proper color and the minimum size, with no unnecessary brim. This would indicate a small, close-fitting cap of the color of the uniform. The second can be provided by a low sloping visor, which should not be black, but nearly of the color of the cap. To cover the fifth condition the visor might have the color of the insignia. A cap will stay on better than any other headgear. Protection from rain, however, is better provided by a hat, as its brim will keep the rain out of the back of the neck. A duck hunter's soft cap, with a sort of visor to the rear, as well as one in front, would fulfil all the conditions except the fifth. It would not have a smart appearance. Probably a cap would be developed on these lines that would look all right. The subject is worth investigating.

The above applies to the summer cap. The winter cap should furnish in addition some protection against cold, especially to the ears. This is provided in the duck hunter's cap referred to. The addition of ear protection and the change to heavier material should cover the difference between the summer and winter caps.

There appears to be no need of insignia on the cap. Insignia should always be on the man, and the cap is too easily lost. All caps should be precisely alike, except possibly in texture. When close fighting in trenches, etc., is going on, the enemy should not be able to distinguish the officers by their caps. There is no apparent objection to the cap being ornamented with a coat of arms, spread eagle, or anything of that sort, but it should not be depended upon for any of the functions of insignia.

Our present campaign hat is too large and will not stay on. Our recently adopted service cap is too heavy and is unnecessarily large. Its black visor and band are too conspicuous, and it affords no protection to the back of the neck against rain. It has to be augmented by a hood to be satisfactory in cold weather.

Foot Gear.—For the field the following conditions should be fulfilled:

1. Protection against mechanical injury, and as far as possible, against dampness.
2. Lightness.

These are probably the most important functions of any

part of the uniform. An army's ability to march is almost as important as its ability to fight. Nothing is so important in marching as the foot-gear. If it chafes or blisters, or permits the feet to be injured, the wearer's usefulness is vastly decreased.

An extra half pound on the feet is worse than an extra pound elsewhere. Worn out soles may be impossible to replace before a march upon which profound results may depend. The sole is the important part. It should be stiff enough to protect the feet against injury from hard or rough ground, or from fatigue produced by the same causes, and at the same time flexible enough to permit some bending under the ball of the foot. If possible, it should never wear out. Perhaps the three most important things in a campaign are the soldier, his gun and the sole of his shoe. The most durable sole leather should be used, regardless of expense, and if a better material than sole leather can be produced, the Government should offer a liberal prize for its inventor.

To prevent chafing, the upper part of the foot and the ankle should be covered with a tough, waterproof, but not air-proof, material. Leather seems to be the best material yet devised for this, and the shoe is the best form for it. Boots are impossible to adjust to the foot and are uselessly expensive. They should find no place in any uniform for our army. Their advantages for foot soldiers are far outweighed by their disadvantages. They may do for cavalry that never dismounts, but the cavalry of the future that amounts to much will be mounted infantry, and the shoe will prove its best foot covering.

To protect the lower part of the leg against briars, wet grass, etc., leggings have been found useful. They have many disadvantages. Among the latter are their discomfort in camp and garrison, necessitating both trousers and breeches, a defect of some importance. Leggings are troublesome to put on and off. They are likely to add to a bungling excess of cover immediately at the ankle. As at present worn, cases might occur where the ankles would be covered by five thicknesses; drawers, stockings, shoes, trousers and leggings. It will always be covered by at least three of these. Two thicknesses at any point of the body are enough—one for warmth and comfort, the other for protection.

With this view, it is desirable to eliminate, if possible, the leggings. The socks and drawers should furnish the necessary

warmth and comfort to the feet and legs. The shoes and trousers should be made to furnish the protection.

Assuming a pair of high lace shoes, with the tongues sewed into the tops, it should be an easy matter to devise a pair of trousers that would do the rest. The following solution is suggested: Make the trousers entirely of stout canvas, of a different thickness for winter and summer. Make them of conventional cut for camp wear, but add on the outside of the lower leg a double row of lacing hooks in the form of an inverted "V" so that it will always fold at the same place. Then, for marching, fold in the trousers leg and lace it snugly around the ankle inside or outside the shoe top. This protects the entire leg against briars, etc., is mud-proof, and for a quick step or two, reasonably waterproof, and simplifies the uniform. The laces for both shoes and trousers should be strong, durable leather like porpoise hide. Those for the trousers should be detachable and an ample supply of extra ones carried. This arrangement is essentially the same as is used by many hunters, ranchers, etc., who seldom use leggings. It would be much more quickly put on than the present rig in case of a sudden call to arms, a most important point.

Coats and Shirts.—The principle of an undergarment for warmth and comfort and an outer one for protection would seem to apply properly to the trunk and arms. The first of these can doubtless best be obtained by a suitable undershirt. To determine whether the outer garment should be a coat or another shirt, is not so easy. The latter has some advantages. It gives greater freedom of movement. Most enlisted men wear their coats only to obey orders, and they leave them unbuttoned, except in the presence of officers.

Without the coat, suspenders cannot be worn as they are unsightly. Our enlisted men, however, are young men and of such figures that a belt can be worn to hold up the trousers. Not so with some of the officers.

On the other hand, a shirt is not so good protection against wind and rain and is not so easily provided with pockets. On the whole, the coat seems most advisable.

There seems to be no need of an overshirt for enlisted men. Its principal necessity arises from its use to hold collar and cuffs. These have no place in an enlisted man's field uniform. To give the coat a neat and clean appearance, a piping of white around the collar and cuffs could properly be added.

If this be protected by a similar piping of the material of the coat and extending underneath and just beyond it, it may be kept white and clean during the life of the coat. It would not interfere with the principle of invisibility.

The cut of our present field coat seems to be all that can be asked, except that a standing collar would be better.

Overcoats, Rain coats, Capes, Etc.—For ordinary protection the coat is sufficient; for extra exposure an extra garment is needed. This should be of a single uniform type and color. Now we have the overcoat the hood and a variety of vaguely specified rain coats, capes and ponchos.

To protect against extreme cold, a fur-lined coat, special cap and shoes, appear sufficient. These would only be needed under exceptional circumstances and would not disguise the uniform as the present loose requirements of capes, etc., may do.

Against rain and snow nothing is better than a mackintosh, and with warm clothing underneath, it is as good or better than an overcoat against cold, especially cold winds. To enable officers and men to use their hands freely, and at the same time be protected, the Inverness cut of garment with a rather long cape would seem to be the best.

The collar should be standing to show the insignia for organization. Insignia of rank should appear on the shoulder. Then all hoods, capes, ponchos and woolen overcoats should be forbidden.

DRESS OR GARRISON UNIFORM.

With the possible exception of hat and shoes, the garrison uniform for an enlisted man should be exactly the same as the field uniform. He should be ready to take the field at a moment's notice. The same thing applies in a slightly less degree to the commissioned officer.

If the field cap above mentioned cannot be made smart and neat looking, a garrison cap would be desirable, and lighter shoes should be permitted in garrison. The use of the latter, however, should not be continuous. The marching shoe should always be worn on duty under arms, both to insure its readiness and to accustom the feet to its use.

The economy that results from using new suits in garrison and worn ones for fatigue and field is a matter of importance,

dictating that there should be no difference between garrison and field clothing.

FULL DRESS.

At present we have for commissioned officers a full-dress coat and a dress coat, with trousers and breeches common to both. The enlisted men have a dress uniform with trimmings added to make it full dress. All these are totally different in shape and color from the service uniforms. The objection to this is that when worn somewhat, but still serviceable, all these garments must be thrown away. They are all much more expensive than the field uniform, and their value does not seem commensurate with the cost to the government. If the color of the field uniform be judiciously selected, and it be well cut, a new suit will be a very satisfactory garrison and dress uniform for both enlisted men and officers. For full dress, the former can, as now, add a few removable trimmings, and the latter can, if desirable, retain a special full-dress uniform. There appears to be no reason, however, for the full dress and field uniforms being of different colors.

It may be said that sentiment should cause the retention of the blue. This would be true if blue were used throughout; but it would be a crime to require our men to make blue targets of themselves in the field, and if the time comes that the olive-drab, or something like it, is the emblem of field-service and the blue of fireside duty at the Capital, there will not be much left in the sentiment part of the matter. Therefore, let us select one color reasonably quiet in tone for concealment and at the same time suitable for those occasions when full dress is appropriate.

At this juncture it would seem proper to inquire why have full dress at all? In ancient days, a gorgeously caparisoned chief added to his prestige by his clothes, and the terrors of a cavalry charge were doubtless added to by glittering helmets and streaming plumes, but the day of all this is past. To-day, a Russian prince, in his gorgeous uniform, gratifies the eyes of his peasant slaves, and it may also help to keep them in subjection. Our military dress is in many striking respects a sort of copy of his, but it has no similar use, and is in that particular absurd and un-American.

There is, however, a valid reason for a full-dress uniform in our army. This is exemplified by the fact that the entire army wants it. It is due to a very natural and proper cause.

The desire to be distinguished and to appear so is one of the mainsprings of human progress, and especially worthy of consideration in an army. Our simple American life is not opposed to this. Witness the gorgeous habiliments of the Ancient and Honorable Artillery Company of Boston, the Old Guard of New York, and the flowing plumes and regalia of our Sir Knights, and of the Omnipotent Outside Guards, and other dignitaries of our alleged semimilitary secret and benevolent societies. It shows a strong characteristic of human nature, of which we may well take advantage.

A handsome uniform, suitably varied for the different organizations of our army, will attract better men to the service, and add very materially to the improvement that comes from added *esprit de corps*. It should be adapted, however, to the attraction of the right kind of people. A flamboyant uniform will attract flamboyant persons. This might be proper for cavalry sergeants and light-artillery gunners, where dash and "hurrah" are needed, but not for the general commissioned personnel where intelligence is the most valuable asset. Our full dress now is rather gorgeously golden. Its brilliant primary colors, too, are not pleasing to the discriminating eye. These were once necessary in campaign, but at present one can tell an infantry officer from a signal corps man four times as far in a ballroom as in the field.

A uniform, quiet in tone, of fine texture and neat cut, only moderately gilded, with stripes and facings reduced in width or tone, would be much more attractive to men of the qualities desired in our officers than is our present paraphernalia.

The double-breasted-high-standing-collar idea may once have been all right in the phalanx, and may still look military and make for discipline. But the present use of our full dress, viz.: ceremonies under arms and official-social duties, mostly in hot weather or superheated buildings, points to something less garish and more comfortable.

The present attempt at social comfort reached by putting shoulder knots and brass buttons on that most unmilitary looking of all garments, the civilian "swallow-tail," appears to the writer as a rather incompatible combination. It is suggested that for this purpose a simple band of the color of the arm of the service to which the wearer belongs, worn diagonally across the shirt front, would give a more appropriate military touch to the evening dress. The insignia of rank

could be worn upon it, and if the individual has won a medal of honor, he should be permitted to wear it suspended on the shirt front. This should not be extended to any other decoration. In this connection it does not seem to be good American taste to authorize decorations pertaining to various societies be shown on army full dress. The authorized decorations should be limited to those the individual has won himself and which have been given him through authority of Congress. An army is naturally not a democratic institution, but ours must not only be democratic but must appear so, and decorations due to the deeds of our ancestors, while appropriate in their place, do not seem to be suitable on a United States Army uniform.

To return to the subject of full dress, a comfortable coat that will look military is hard to provide for. The inspiration of its military appearance must naturally come from history, as with our present coat, or from recent events as it would be if we adopted the color or cut of our present field coat. A natural source of inspiration would be our Continental uniform, but while this would do for the coat, and possibly the hat, it would not look well unless the knee-breeches went with it, and this would not be in keeping with modern clothing. An objection to the shape of our present coat is that, while it may look well on thin men, it is not graceful on oval shapes, and many of our senior officers, who probably wear full dress more than the younger men, have rotund figures; and our plain, continuous belt line is not much of a success in such cases. The Continental coat breaks up this line very effectively and if a modification of it could be made that would go with modern head-gear and trousers, it would be satisfactory. It would also be comfortable.

Perhaps the wisest plan is not to go to history at all, but to devise a uniform from fundamental principles, just as we have the field outfit discussed above. Let us try it.

Color.—Assuming that a suitable color can be found for the field uniform that will go with the supposedly necessary decorations of full dress, it should certainly be adopted. Failing this, a white uniform is suggested. Our present white summer uniform with no glaring facings is certainly the handsomest uniform our army has ever had. A white serge of similar cut, with suitable insignia in gold and silver, would be attractive to a better grade of beauty and brains than our

present crude gorgeousness and would be both comfortable and military. It could be furnished with some mild form of epaulet, or shoulder knots, that would "square-up" the shoulders, and for rain or extra warmth, a blue, or "service" cap lined with white, or with the present "facings," could be provided. (Flamboyant colors are appropriate for linings.) This would make a suitable and attractive full dress, except that white breeches might not be suitable for horseback duty. These could probably be of the field-uniform color and pattern. Indeed, with the present full dress, the service breeches would go better on horseback than the present bright stripes disappearing into leggings or boots. Dark coats with light breeches are quite conventional and suitable riding clothes.

White full dress might appear expensive on account of its soiling easily. This is true, but full dress will not be worn much where it is likely to get soiled and serge or other material of good quality can be readily cleaned. However, the full dress is so expensive and comparatively unimportant that not less than three years' notice should be given of a contemplated change.

Once adopted, it would be a matter of great value to the Government if the use of its uniforms could be strictly limited to the United States Army. The distinction of wearing an army uniform of any kind undoubtedly brings to the service much better men than could possibly be expected from the present pay, and if the distinction were rigorously guarded, it would improve the personnel more than would the addition of a million dollars annually to the schedule of pay. The wearing of imitations of the army uniform by motormen, bell-boys, etc., requires the United States to add vast sums to its annual expenditures to get the same grade of military personnel that it would get for the lesser expenditure were the uniform exclusive.

Then, too, the uniform of the commissioned officer is frequently used by swindlers, and stolen army clothing is a staple in second-hand shops near military posts. For these reasons it would add to the welfare of the country if the wearing by anyone not in the army of the United States of any part of the uniform, or of any imitation of it sufficiently like it to be mistaken for it were made a misdemeanor.

This would prohibit its use by the National Guard and the question arises as to how to properly uniform them. This the

writer would answer by not uniforming them at all, for the reason that in his judgment the maintenance of separate armies by the States of this country is a relic of ancient days and can never be anything but a farce. If we need reserves, or home guards, or anything of that sort, they should pertain to the United States and be uniformed accordingly. The staff of seventy political "colonels," for instance, that is said to now grace the cortège of one of our State governors, would not be very useful as a "war measure," and the cost of their misleading uniforms could be much better invested in something else. This, however, is a subject beyond the limits of this article and will be treated in a subsequent paper.





SCENE IN FRONT OF OUTRIGAL, MOSCOW.

A VISIT TO THE RUSSIAN TRAINING CAMP AT MOSCOW.

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SEVENTH REGIMENT, NATIONAL GUARD, N. Y.

RUSSIA is a country of great sameness. As you ride along the railway, every small town you pass looks exactly like all the other small towns. The village church, with its five gilt domes, is a counterpart of the last fifty you have seen, and of the next fifty you are going to see, as your journey continues. Even the people resemble each other strikingly, and the moujiks, with their long light hair, full beards, red calico shirts and high boots, look the same, whether you see them on crossing the German frontier or on the log rafts of the lower Volga.

With this state of affairs in civil life, it can easily be seen how it would affect the military world, where uniformity is one of the requisites of a soldier's education. A description, therefore, of the camp of any battalion, squadron or battery in the Russian Army, will do for any other battalion, squadron or battery; and in going over the great mobilization camp at Moscow (except in point of size), you are seeing every other mobilization camp in Russia.

When the reverses in the East made it necessary to prepare more troops for the service at the seat of war, the Govern-

ment mobilized a sufficient number of reservists and conscripts to form what was to be known as the Second Manchurian Army. The headquarters were at Moscow, and here were assembled some sixty thousand raw troops, in addition to the already large garrison of that city. As it was summer, the regular garrison had been moved out of their winter barracks into a training camp near by. The new levies, as they came in, were taken to these unoccupied barracks, and there were fitted out and instructed, until ready to join the troops in camp. This grew daily, until, about the middle of July, there were at least eighty thousand men under canvas, within a few miles of the city.

To visit this vast encampment it was necessary to have the permission of the military governor of Moscow, also a driver of



CORRESPONDENT.

some intelligence for your droschky who knew his way about. The average driver of the street droschky could soon be lost in this vast canvas city, and would be getting himself and his passengers into all kinds of trouble by doing things that are not allowed. Having procured both these necessities—the former from the Grand Duke Sergius, recently assassinated, and the latter from the obliging porter of the hotel—we started upon our tour of inspection. A drive of two miles or so brought us outside the city and on the open plain used by the garrison as a drill ground when quartered in barracks. It was here that the great *plac* was held, at the time of the coronation

of the present Czar, where so many people lost their lives in a panic which occurred at that time.

Here we get our first glimpse of soldiers, for there are two cavalry brigades and some field-artillery out for their morning's work. One brigade was of dragoons, the regular heavy cavalry of Russia, and the other, our interpreter told us, with almost bated breath, was composed of Cossacks. The modern Cossack, as far as looks are concerned, is an awful disappointment. We are accustomed to picture him, from what we have read in history and romance, as arrayed in flowing, brightly colored garments, a high hat of priceless fur upon his head, and armed to the teeth with a variety of weapons topped by a long, slender lance. He should have a fierce and glittering eye, enormous whiskers, and always ride at a dashing gallop. As for drill and discipline, they should be unknown to his ideas of soldiering. How true this may have been in the past I cannot say, but to-day he is very like the rest of the mounted troops of this great nation. To see a regiment, dressed in dirty white canvas blouses and caps, quietly executing fours right and left at a walk, under command of a very stout colonel, anything but at home on the back of a sedate pony, certainly shattered another of the picturesque ideals of the romance of war in Russia. Except those of the Imperial Guard, who, on gala occasions are arrayed in their historic uniforms, the Cossack now dresses like the rest of the cavalry of the line. They still carry the lance, and in full dress their trousers are a trifle more baggy and the stripe much wider than those of the ordinary dragoon. Also, they never wear spurs. This is one of the incongruous things about the Russian service. Here are troops that are supposed to be continually in the saddle who never wear a spur, while in every other branch of the service, all officers of the rank of captain (who are supposed to be mounted) or over, never move without a large pair of them jingling at their heels. You will see a stout officer of the railroad regiment acting as station-master, who has probably never been on a horse in his life, arrayed in them, or an officer of marines clinking down the stone steps of the Admiralty. The troopers use the Cossack saddle with the high pad on the seat, which gives them the appearance, with their extremely short stirrups, of being anything but comfortable or secure on the backs of their mounts. However, they do some hard riding in this way, and are much more at home on their horses

than their officers. The latter use the ordinary English saddle, and nothing we saw that day in any way changed our opinions that the average Russian officer, as a rider, is a very much overrated individual. The horses are small, but looked tough and wiry. Their coats and equipments were in anything but good order, and the Cossacks themselves looked much better at a distance. The day was warm, and when they passed close to us, with the wind blowing in our direction, we were glad that the movement was being done at a gallop. The dragons had larger horses, European saddles, and were equipped with rifles instead of lances, and were having a much more lively drill, with some particularly exciting charges.



DRAGONS.

We drove on across the plain and passed a large building surrounded by a pretty grove and garden, and used by the officers as a casino and club. Here some regimental band plays every evening, and many entertainments are given. We soon arrived at the camp, and finding that we were at that part occupied by the First Moscow Grenadier Division, decided to make our first stop here. We were received most courteously by the division commander who welcomed us in excellent English, and after the usual glass of vodka and a cigarette, an officer was detailed to show us about. What I said at the beginning of this article applies here, and a description of more than the camp of the first battalion we visited would simply be a repetition.

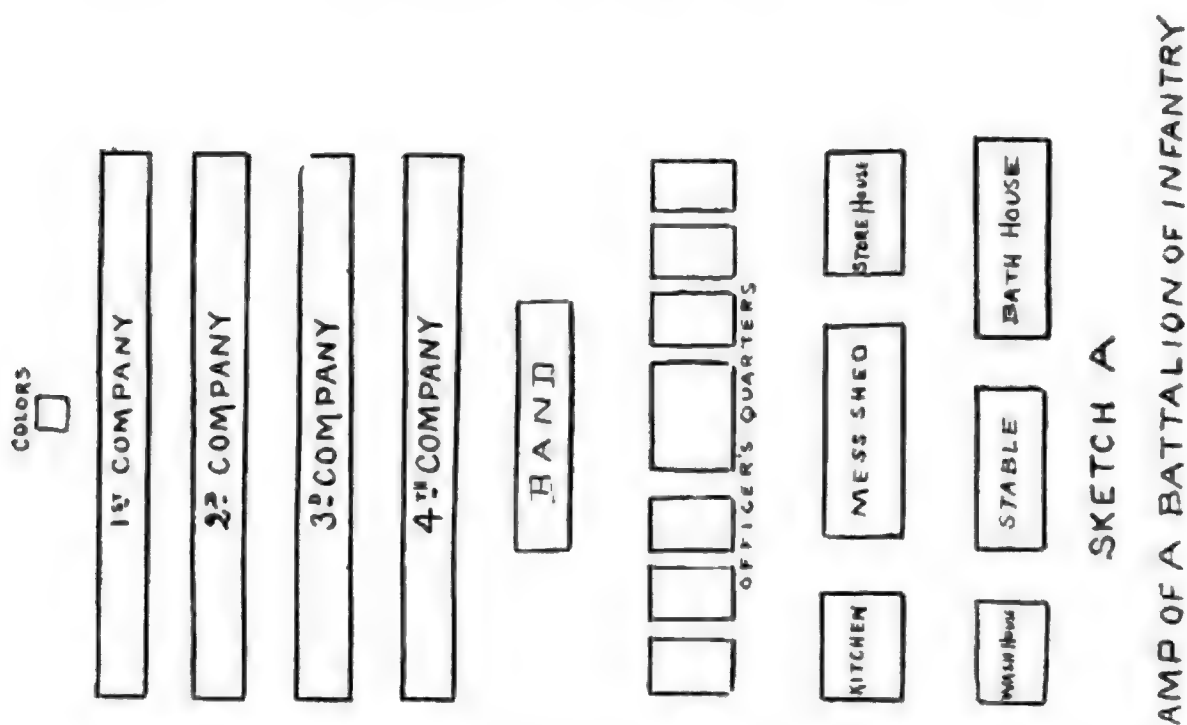
The tents were pitched among a low growth of trees that added much to the appearance, but were not high, nor thick enough to keep out the sunlight necessary for all camps of large bodies of troops. The company streets, broad paths around the camp and in front of the officer's quarters, were free from grass, the earth rolled hard and carefully and neatly kept. In fact, they were the only things in the whole camp that seemed to come under these conditions. On approaching the camp, we were first attracted to a small shed standing well out in front of the first row of tents; an armed sentry stood at each side, and underneath were piled the drums of



OFFICER OF HONOUR.

the battalion with the colors resting upon them. Here, also, on certain feast days, is displayed the sacred icon of the regiment, of which I will speak later on. At each end of every company street are stationed sentries, or rather orderlies, as they carry no arms, and they are responsible for the condition of the street. The tents are about fifteen feet square, and are supported by a long pole in the center and four small ones at each corner. In a permanent camp they are raised about four feet from the ground on logs or boards banked with earth, and are occupied by eight men. Around the center pole are racks for the arms and equipments. In the field, the tents are pitched directly on the ground, and then provide shelter for sixteen men. The average Russian is a large man, and the space allowed him on field service—6 feet by 2 feet—must in some cases be pretty well filled up.

The Russians hate fresh air for ventilating purposes, and even in the hottest weather will keep the double windows of their houses closed, while at the first sign of approaching winter every crack is hermetically sealed, and it so remains until the following spring. With a tent it is difficult to do this; still the soldiers manage, by banking the sides with earth and having a double fly over the entrance, to exclude a great deal of the good air necessary to properly ventilate the interior. A visit to six or eight showed them all to be in the same condition, and as the atmosphere was anything but agreeable, further inspection was confined to the exterior only. In all



those tents visited (selected at random) the same state seemed to exist. No attempt was made to keep things in an orderly manner; blankets seemed to be left exactly as the men had rolled out of them several hours before, and equipments and other property to be kept where and in the condition it suited the owner. Such a thing as dressing a tent under orders in a uniform manner and preparing it for inspection seemed to be as unknown as raising the sides to dry it out, or putting the blankets and clothing in the sun for an airing. These points of camp regulations which we consider a necessity seemed to be entirely at the option of the occupants.

One thing, however, there was uniformity about, and that

was the sacred icon. Every tent had at least one of these hung upon its canvas wall. It was generally that of the patron saint of the regiment, though many of the men had the icon of a special saint suspended over their sleeping places. These icons were small, cheap affairs, but many regiments have large and very beautiful ones that are displayed and carried by them on certain occasions. The icon plays a most important part in the religion of Russia, and troops will follow a regimental icon into battle with enthusiasm, under conditions that would make it impossible to get them to fight in any other way.

Until I visited Turkey and the Balkan States. I always supposed that the popular abiding place of the wicked flea



CHARGES.

was equally divided between Italy and Spain, but am now convinced that the entire population of this order, from all these countries, were visiting their numerous relations in Russia last summer, and had selected the different mobilization camps as places for a pleasant outing during the warm weather. I cannot say that I actually saw any, but they certainly made their presence felt after visiting the interior of any of the tents or quarters.

Back of the tents are the officers' quarters. They live in small houses of four rooms each; subalterns are quartered two in a room, captains have a room to themselves, field officers two rooms each and the regimental commander an entire house. There are also a headquarter building, adjutant's

office, etc., and a regimental mess building, on the same line. At the latter all the officers take their meals. On the next line are the storehouse, kitchen and mess shed; in the former are kept all quartermaster's stores and the dress uniforms of the men in time of peace. They are not allowed to keep them in their tents, but the uniforms are issued when the occasion demands, and are afterward returned. Dress uniforms have been discontinued for the time being, the troops bringing into camp only their field outfits, and the storehouses are now filled with war material to be issued later on when the troops leave



RUSSIAN SOLDIERS.

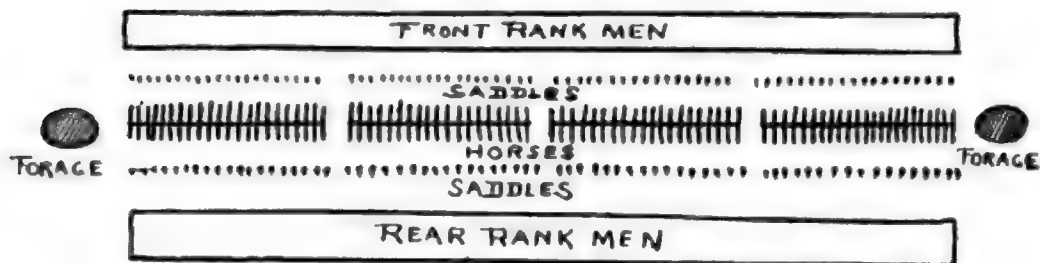
for the front. The kitchens are small, not at all clean, and as the bill of fare of a common soldier has little variety, the cooking arrangements are very simple—an oven for baking, and large pots for boiling soup, meat or coffee, being the principal equipment. Little of the latter article is drunk, however, the men preferring tea, to brew which, at all times, every company has a samovar of its own.

On account of so much bad weather each battalion generally has a mess shed for shelter. This is furnished with rough seats and tables, and the men go there to eat after receiving

their rations individually at the cook-house. There is no attempt at any messing together of the men, to procure luxuries, as is done in almost every other army; the Russian is more than contented with his bowl of soup, portion of boiled buckwheat and black bread, if there is only enough of it. This probably is much better than he ever had at home. There is sometimes a canteen attached to a regiment, but they are not much of a success. A private soldier, receiving only about six rubles (\$3) a year, has little money to spend, and if he has, prefers to do so outside of camp when he can procure his beloved vodka.

In rear of the camp are stables for officers' horses, wash-house for clothes (little used) and the inevitable hot baths. A Russian is a queer combination in his ideas of personal cleanliness; he will go for a week or more without undressing, or

CAMP OF A SQUADRON OF CAVALRY.



SKETCH B

washing his hands or face, and then a sudden desire for a bath overtakes him. It must be a hot one, and he will sit for half an hour submerged to the chin in water that would peel the skin off an ordinary person from any other country. Arising almost as red as a boiled lobster, he arrays himself again in the same dirty clothes and walks out into the cold air perfectly satisfied. That they do this in the most severe winter weather, without taking cold from the sudden change of temperature, proves what a hardy race of people they are. The habits of his early life follow a soldier into the army, and every battalion must be provided with a bath-house. This is arranged with a small room for officers, and a large one for the enlisted men. Here are boilers for the heating of water, and large tubs for the bath itself. On entering, the room is full of steam, and I should not care to venture a guess as to the height of the thermometer. Around the room are rows of tubs, each one

with a smiling yellow head rising from it. During the rush hours the men go outside to dress, so as to make room for those waiting, and the newcomer does not always think it necessary to put fresh water in the tub, provided its former occupant has left it hot enough.

This finished the inspection of our first camp, and further investigation in other regiments and different branches of the service revealed nothing new or novel. With the cavalry and artillery there was a little different arrangement of tents (sketch B) to allow for the picket lines and the parks of the guns and battery wagons; the general plan, other than that, was substantially the same. The hospital arrangements are not shown to strangers, but I was assured by many officers that the average health of the troops was excellent. They certainly appeared so, for, in spite of the lack of ventilation, the disorder in which they live, and the pleasure they get in almost boiling the life out of themselves, they were a remarkably fine, healthy looking lot of human beings.



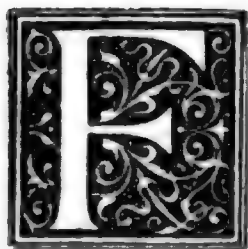
FRENCH VIEWS ON THE EMPLOYMENT OF CAVALRY IN COMBAT.*

FROM THE QUARTERLY GERMAN GREAT GENERAL STAFF.

(FOURTH ISSUE, 1904.)

TRANSLATED FOR THE SECOND DIVISION, GENERAL STAFF, U. S. A.

BY CAPTAIN C. W. FARBER, EIGHTH CAVALRY.



FOR September 4th a new condition was given. The North-party, in command of General Durand, embraced the Fourth Cavalry Division, the Sixth Brigade of Corps Cavalry, one battalion of infantry and the bicycle company. It was to cover the disembarkation of troops at Amagne, toward the south, where the opponent was reported on the Retourne River.

The South-party consisted of the Fifth Cavalry Division, the Second Brigade of Corps Cavalry, and the Eighty-fourth Brigade of Infantry (less one battalion) in command of General Mayniel. During the night of September 3d to 4th, this South-party was sheltered in the Retourne Valley, between La Chatelet and Juniville. On September 4th it was to seize the railroad junction Amagne, and was to prevent the disembarkation there taking place.

The North-party crossed the Aisne and established itself in readiness on the left bank, on a broad front, between a point in the country south of Bethel and Givry; sent reconnoitering detachments toward the enemy and awaited his approach.

The advance of the South-party was certainly not free from objections: the Fifth Cavalry Division originally intended to proceed to Givry via Annelles, to secure the crossing at that place, while the infantry was to engage from Juniville over Annelles, Ambly and Seuil. To this infantry column, however, had been attached only two squadrons, which proved not enough for the information and security duties. The infantry was repeatedly compelled to deploy. The cavalry division, as it struck several hostile squadrons marching without security, southeast of Ambly, allowed itself to be

*Concluded from May number of the JOURNAL.

misled in bringing its artillery fire to bear on these squadrons, instead of charging them by surprise. Thus it disclosed its presence and intention and found the crossing at Givry occupied in time by hostile wheelmen, whereas, originally, up to 9.30 A. M., only one cavalry post had been stationed there.

In this way it happened that the cavalry held itself behind the infantry, and left to the latter the solution of the problem, without an earnest effort on its part to make a flank movement, or by any action of its own to co-operate with the infantry, while it, the infantry, forced the passage of the Aisne at Ambly. By the time the infantry succeeded in this, it had arrived, to within several kilometers, near the disembarking point, Amagne, and thereby immediately threatened that place. The cavalry division was therefore entirely superfluous.

The North-party offered but slight resistance on the left bank to the advance of the infantry and soon withdrew to the right bank, where, from behind a water-course flowing close to Amagne, it intended to delay the deployment of the opponent when he reached the right bank.

Before the division got fairly to work in the solution of its problem, the combat was broken off, because the Minister of War, who was present, desired to have a parade and after that gave a breakfast.

One can also hardly agree with the proceedings of the North-party. Just how far it extended itself in its first position on the south bank, and how it distributed its strength, is not clearly to be seen in the reports. Even if it held its main body together (which, in fact, was the case at Seuil) it would seem that a prolonged resistance, with the river at its back, was precluded.

If desired to solve this problem defensively, the detachments of cavalry, which held the crossings of the Aisne, and which could have been replaced by the infantry and the wheelmen, would have sufficed to obtain the information of the direction of approach of the hostile squadrons, while the main body should have found a position on the right bank, in order to dispute the passage of the opponent. If one felt strong enough, or, if the railroad station at Amagne could be reached from the left bank by artillery fire, it would have been quite proper to cross to the left bank after occupying the crossings, though not to establish oneself close to the river at Seuil, but to move against the adversary.

Cavalry came more to the foreground on September 5th, the last day of practice of this part.

The North-party, in command of General Durand, was made up of the Fourth Cavalry Division, the Sixth Brigade of Corps Cavalry, the 151st Regiment of Infantry and the bicycle company. In the act of pursuing a retiring adversary it arrived at the River Aisne, between Rethel and Thugny, on the evening of the 4th, and on the 5th of September was to continue the pursuit and to prevent the hostile column from crossing the River Retourne.

The South-party, the Fifth Cavalry Division, the Second Brigade of Corps Cavalry and the 162d Regiment of Infantry, in command of General Mayniel, had orders to cover the retreat of two army corps, moving in a southern direction and to guard their crossing the River Retourne by maintaining itself on the heights of Perthes and Annelles. The passage of the army corps, between Juniville and Le Chatelet, was to begin at 7 A. M. and be completed by 10 A. M.

To carry out his instructions, General Mayniel occupied the north edge of the pieces of woods on both sides of Perthes, with the 162d Regiment of Infantry and the Second Brigade of Corps Cavalry and placed the Fifth Cavalry Division in readiness northeast of Perthes. Here it was charged by the Fourth Cavalry Division. The charge shaped itself favorably for the Fourth Cavalry Division, because its two batteries were efficiently engaged and because the bicycle company succeeded by an opportune movement to reach the flank of the opponent, and at a distance of 800 meters to develop an effective fire.

Retreat and pursuit were thereupon continued; another attack followed, after which the exercise was terminated.

In general, as far as the proceedings show from the reports, it would seem that things were conducted more satisfactorily on this day. Here cavalry charges were in order. The cavalry of the retreating party had to get rid of the pursuing party under all circumstances. Nothing is said of the action of the infantry.

The first part of the exercises, infantry and cavalry combined, was herewith concluded. The two following days, September 6th and 7th, were devoted to drills in the locality west of Rethel. One division drilled each day, alternating with the other, which had a day of rest. The principal pur-

pose was to test the most adaptable and appropriate formations to be employed under fire.

A regiment of cavalry, the machine guns and the artillery, composed the represented enemy. The regiment was employed to represent, with the help of flags, a large number of squadrons, which were to dismount to fight on foot and represent infantry. The entire represented enemy was established on a height with instructions to open fire with every squadron or each subdivision, also with artillery and machine guns, on every body of troops that became visible within 2000 meters and to cease firing as soon as the object was withdrawn from sight. The leader of each represented squadron was required, at the conclusion of the exercises, during the discussion, to report on the formation of the troops upon whom he fired and on the respective distances.

In opposition to this it was the problem of the cavalry division to advance against the enemy in bounds and during the movement to use such fighting formations most suitable to the ground, the hostile fire and the distance, that is, in single rank lines, lines in column of fours, yet to be discussed, squadron columns in echelon, and similar formations.

During this practice were included exercises in the charge, in the *mélée*, assembling and pursuit. Above all there was to be brought out the necessity in the pursuit, to get in hand quickly, subdivisions formed in close order, while the represented enemy suddenly appeared on a flank.

For the third part of the exercises, which took place on September 8th, 9th and 10th, two parties were again formed.

On September 8th, General Mayniel, with the Fifth Cavalry Division and the Second Brigade of Corps Cavalry, was to hold open the crossings of the Aisne at Balham and Asfeld-la-Ville, for two army corps following from the south. The opponent was reported at Chaumont-Porcien.

General Durand (Fifth Cavalry Division and Sixth Brigade of Corps Cavalry), at Chaumont-Porcien, had to attack a hostile cavalry division which was protecting the crossings in the region of Asfeld-la-Ville and was to delay the passage of the troops following.

General Mayniel, with parts of the brigade of corps cavalry, occupied favorable intrenchments southwest of St. Fermeaux and placed himself behind it in readiness. His opponent, as soon as he was informed of this position, attempted to go around

the left wing of General Mayniel, with a view of forcing him away from the crossings he had to protect. In front, he kept him busy by a combat on foot, and on the flank attacked him from the direction of Bannogne. Here a charge was made.

The 9th of September was used for a thoroughly peculiar exercise.

According to the war situation, a west army, on September 8th, had reached as far as the heights of La Selve, west of the River Barre, and contemplated to rest on September 9th. The Fifth Cavalry Division was to undertake the covering of the army toward the east and bivouacked in the region of Bannogne, securing the army with the Third Brigade of Dragoons, which was pushed forward to the St. Fergeux Brook. This brigade occupied the crossings from Seraincourt southward to the mouth of the brook, established itself for defense and was to maintain this position in the event of an attack.

Opposed to this, the hostile Fourth Cavalry Division bivouacked in the region of Sery and secured itself by occupying the crossings of the River Vaux.

The design of the director of the exercises was to test those measures of security that were prepared at the various billeting places and at the intrenched posts thrown forward.

During the day both parties remained in their immediate camps and quarters. At the instigation of, and in presence of the director, operations against the crossings by single and by combined squadrons took place in the forenoon. In the afternoon a larger operation by the Fifth Cavalry Division, by the way of Seraicourt and Son, against the crossing at Mauteville, was undertaken. As soon as this movement became known, the Fourth Division continued to occupy the Vaux crossings and turned the main body against the Fifth Cavalry Division. At this moment the exercise was discontinued on account of the bad weather.

On September 10th the assembled Fifth Cavalry Division, east of Le Thour, was given the problem to destroy the railroad between Amagne and Hirson. Hostile cavalry in force was reported at Inaumont and Hauteville.

The opponent was a cavalry corps formed by the Fourth Cavalry Division and a division made up of the two brigades of corps cavalry (five regiments) in command of General Durand, and at 6 o'clock in the morning stood assembled in

the neighborhood of Inaumont on the Vaux. Here the leader received information of the presence of a hostile cavalry division at Le Thour, which contemplated the destruction of the railroad between Amagne and Hirson.

The Fifth Cavalry Division advanced from Le Thour via Ecly and Sorbon to carry out the destruction at Novy, but while on the march received the intelligence that a hostile cavalry corps, between Hauteville and Inaumont, was threatening its flank.

As a matter of fact the cavalry corps moved in two columns toward Arnicourt, from which place it intended to thrust itself against the flank of the adversary at Sorbon. The enemy was met at this point. The composite division attacked him from the front and on the left flank, while the Fourth Cavalry Division was to fall on him in rear. The attack of the composite division, however, was made too precipitately out of Arnicourt, as soon as it became aware that the artillery of the Fifth Cavalry Division had been placed in position at Sorbon to protect its flank. The attack, as developed from the column, in the echelon like manner, on account of the way Arnicourt was hurriedly rushed through, would most probably have failed before the Fourth Cavalry Division could have become engaged. Before the combat reached the final stage, the exercise was broken off.

According to the views of the director, the Fifth Cavalry Division would have best accomplished its object as follows: It should have united all the sappers of the division (in each squadron there are ten men especially trained in field-sapper duties) and sent them to the left bank of the Aisne, about as far as Thugny, where they could cross the river and undertake the destruction of the railroad. Most remarkably, nothing was said of the employment of the pioneer detachment. While this was going on the division should have been stationed on the left bank of the Flumion and Vaux, as a protection to the work of destruction, and should have occupied the crossings. In any case, the success of such an operation primarily depended on the condition, that it must be executed quickly and kept from the knowledge of the enemy as far as possible.

The director does not seem to have mentioned the principal difficulty, which consisted in ability to cross the Vaux and Flumion in the face of a superior enemy, and to take a position on the left banks of those rivers.

The exercises were herewith concluded.

The views of the director and the particular purposes that he pursued, in the design and execution of the exercises, are clearly apparent from his maneuver regulations and criticisms, as far as they became known through the press.

In his previously issued maneuver regulations, indeed many of the literary ideas, heretofore discussed, turn up again. It is nevertheless deemed appropriate to repeat his directions in a coherent manner.

In the first place, he dwelled on the purpose that the exercises should serve in testing those formations and movements which are the most suitable and adaptable within the limit of the enemy's fire.

Only by great celerity of movement, skilful use of the ground and adapting the formations according to each varying condition, is it possible for cavalry to maintain itself against the long range and fire rapidity of modern weapons.

The only gait at which even small cavalry detachments can pass over coverless ground, under hostile fire, is the extended gallop. Under cover, horses should be allowed to recover breath and order re-established.

Massed formations are absolutely excluded within the hostile fire.

The regimental column, the brigade in brigade column and in regimental columns are only formations of assembly, which may yet be employed in movements on the battle-field outside of the hostile fire zone, but within the limit of hostile artillery, would lead to the immediate destruction of the troops. Squadron columns are only employable beyond 1500 meters, though even then it is strongly recommended to place them in echelon, whereby they would be subjected to less loss and are more manageable for employment.

For smaller units, General Poulleau recommends the regular form of "line in column of fours," which corresponds to the well-known "line of section in fours" of infantry. This is a company column separated into sections, in which the various subdivisions are formed as sections and march abreast of each other with an interval of six paces or more.

This formation can also be assumed by the various companies, within the wide, deep and double column of the battalion, instead of the company column. In the deployment of the battalion for combat, it is recommended that the line

of sections in fours be used in the advance up to 1200 meters of the enemy.

In the squadron, according to the drill regulations, by the simultaneous breaking into columns of fours from line by each subdivision, the line in columns of fours is formed when difficult, broken ground is to be traversed. Lately there is a disposition, as has become known otherwise, to employ this formation for movements within the limit of hostile fire.

According to Poulleau's views, one can only use the line, preferably in single rank, within 1500 meters. It is recommended, in order to disperse the hostile fire, to broaden the front as far as the regard for the demand to hold the troops in hand and to lead them will permit. The fire effect particularly involves the necessity that a cavalry command separate and deploy with such intervals and distances, that in the advance it may utilize the accidents of the ground and reduce the losses. Owing to the rapidity of its movements there should be no danger in this, as it can readily unite at any time for the purpose of making a charge.

Poulleau frames his demands thereto that the movements of cavalry within the limit of hostile fire consist in a series of bounds, made from cover to cover, at the most rapid gait, and in such formations as are most suitable under the circumstances, the nature of the ground and the effect of the enemy's fire and which will diminish the losses as much as possible. Larger bodies of cavalry could therefore advance in brigade, regimental, squadron and even platoon formations.

Of the rest of the exercise directions, there is only worthy of note that, Poulleau reiterates the general maneuver regulations, in which the charge of cavalry against cavalry must be stopped within a 100 meters of each other, whereas, in the mounted attacks against infantry or cavalry, the hostile lines must be ridden through so far as this can be done without danger. Otherwise the cavalry must draw off to the right and left, but under no circumstances after the attack is it allowed to halt in front of the hostile fire.

Moreover, the passing-through attacks were in the meantime abolished by a war ministerial decree in 1904, because their execution apparently met with great difficulties.

Verbally, General Poulleau expressed himself as follows: "Faster, only faster! Only by rapidity and flexible forms can cavalry fulfil its glorious mission in the future, in that,

while under hostile fire, it employs light formations, quickly changing to close order under cover and thus is always ready to pitch in."

Special stress was laid by General Poulleau on the practice of the *melée* (compare the report of September 6th and 7th). Theorists maintain, however, that it will seldom come to the actual charge, because, before that point is reached, one of the sides, under the influence of the other, will turn about. "I do not wish to offend you, gentlemen, by believing of you that you will turn. But you must not also take for granted that the German cavalry, or any other, is less brave than we are. Consequently, it will after all come to the charge, the *melée*, and the pursuit."

In his criticism he pointed, out as the principal task of cavalry, the protection, the complete security and the support of its own infantry on one hand, and the action against hostile infantry on the other. The infantry must be sought, harassed without rest, delayed, forced to deploy and by often repeated sharp engagements, whether with the carbine or mounted, cause it to become nervous and exhausted.

In regard to hostile cavalry, it must be gotten rid of when met; but this is only a means, not the end. If it is not met with, all the better, in that case the other side did not do its duty and left the field free to us.

Poulleau then turned to the reproach of particularism, ascribed to the French cavalry, which is specially noticeable in the accounts of the great army maneuvers and seems to be justified. It is contended that during maneuvers cavalry is completely under the spell of the hostile cavalry and only exerts itself to seek that and to charge it, instead of turning to the main issue, to wit: to disburden its own infantry, and to gather information about, and to harass the enemy's infantry.

One continually sees the same picture during a maneuver; after the two cavalries have charged each other, they dismount and believe that they have accomplished their parts.

One cannot interpose here too much; time and again cavalry had to be reminded that it exists on account of the infantry. In a forward movement, it is the duty of the cavalry to seek the advanced parties of the hostile infantry columns and to delay them. But this is to be attempted in a manner suitable to the conditions. To engage the flanks of the in-

fantry column is useless, as the flanks are constantly ready to fire without having to deploy. Even an attack on the rear of a column compels the subdivisions only to form front, but does not stop the column.

What important duties do not fall to the lot of cavalry in a retreat and the pursuit? Then it must sacrifice itself for the infantry and cover its withdrawal, or must reach the flanks or rear of the retreating hostile infantry columns.

The innovation of the director to have an infantry brigade to participate in the first part of the exercises was very commendable. General Poulleau thereby carried out the object to accustom cavalry to act in common with infantry, also to show, as an object lesson, that cavalry is principally intended to support infantry. It was also to be particularly impressed that, if cavalry is to assert itself under the various conditions of combat against modern weapons, it must understand how to handle the carbine as well as the saber.

What purpose the director followed on the single days, with reference to the combined action of infantry and cavalry, is remarked by him in the following:

"On the first day, cavalry was to have supported the action of infantry; on the second day, it had to attack infantry; on the third day, it had to act in common with infantry, and on the fourth day, to cover its retreat. The exercises have shown that cavalry has yet very much to learn in order to act appropriately in accordance with the varying conditions.

"This verdict is confirmed by the course of the exercises just discussed, and by other sources of information. The military professional press particularly remarks that, 'the importance of the combat on foot, has in no wise yet entered into the spirit of the cavalry. Instead of taking to the carbine, at the proper time and place, it pleased the cavalry to constantly make charges, which often caused wholly useless sacrifices. Wherever it struck the enemy, it invariably charged him, immaterially, whether he was cavalry, infantry or bicycle men.' "

Concerning the experiences with "line in column of fours," no further accounts are given. General Durand who originally was an artilleryman, and later commanded an infantry brigade (in France generals are frequently transferred to other branches), and who expressed himself from an artilleryman's point of view, was also in favor of small columns. If they

move rapidly and skilfully over the ground, frequently changing direction to the right and left, it becomes very difficult for artillery to fire upon them with effect.

Of the leaders of the cavalry divisions, it is remarked that, just as in 1902, they stuck too closely to their troops, and on the march, were mostly found fifty meters in front of the main body. But whenever they rode forward to reconnoiter they appeared with their entire staffs and division flags, on top of the heights, discernible from afar.

The horses, we are told, generally presented an excellent appearance. It seems, however, that the squadrons only turned out in small strength, and to have left a number of horses behind in quarters.

Concerning the employment of the bicycle company, the detachment of pioneers and the machine guns, the following became known:

The bicycle company is praised very much, and as gleaned from the reports of the operations, appears to have repeatedly done most efficient services. Their leader was the well-known Captain (now Major) Gerard, the tireless champion for the necessity of organizing permanent bicycle companies. It was regretted that only one bicycle company was ordered to participate in the maneuvers, although four such companies already existed at that time.

Once, during an engagement, while the wheelmen were waiting on ground from which their view was shut off, and having left their wheels behind them, they were surprised by a half squadron of dragoons. These came upon the rear of the wheelmen and cut them off from their wheels. The spirited wheelmen, however, struck at the horses' heads with the butts of their rifles to disperse the riders, the latter were about to resort to their lances when the officers intervened.

Little use was made of the detachment of pioneers, ostensibly because it was not understood how to utilize them. For several years, regular efforts have been made at the large cavalry exercises to employ detachments of pioneers on wheels, without as yet having come to a definite conclusion.

The machine guns rendered valuable services. These, too, in France, are still in an experimental state with the rifle battalions, as well as with the cavalry divisions. In the rifle battalions, the portable machine guns are carried on mules and are intended for mountain warfare; those belonging to

the cavalry divisions are transported on wheels. It is known that in France the Hotchkiss system is being tried, but the model thus far experimented with, is, according to the military professional press, not yet considered completely serviceable for war purposes and requires improvement. It is, however, only a question of time before the defects yet in existence will be removed.

Experiments were also made with a bridge apparatus, with which the French cavalry, at this time, according to the budget, is not yet fitted out. The question treated of boats of steel, with which a bridge was constructed on which the men crossed, while the horses were made to swim alongside. Here the difficulty obtained that, though the horses took willingly to the water, they experienced much trouble in getting out on the other bank. To obviate this, a movable ramp was tried, though this increased the material and added weight to the outfit.

If one wishes to pronounce a grand verdict on the plan and execution of the maneuvers, one must acknowledge that General Poulleau knew how to frame the course in an interesting and many-sided manner. The great variations in the problems assigned the cavalry, the diversity of the conditions and the difference in the strength of the two parties on the single days, are worthy of remark.

From the extensive field of practice, assigned to the first two days' exercises, which, to be sure, fell through, to the closest contact with the infantry and the topically, sharply defined problems, the war conditions changed constantly.

The given problems were generally warlike in character. The often-repeated scant form of a particular order without sufficient foundation based on the alleged war condition is common in France.

The execution of the exercises proved materially more interesting on account of the free use of the variations of the ground, than when carried out on drill grounds.

The drawing upon the infantry for the four days was in itself a wise measure, even if the infantry did fail in its purpose on several occasions. The cavalry repeatedly stuck to its own infantry instead of using it only as a point of support for its own movements and as a reserve to fall back upon, but for the rest to retain freedom of movement. That several times it took the wrong course of procedure when it met hostile in-

fantry has been mentioned in the discussion of the single day's operations.

The cavalry did not always correctly grasp its relation to the infantry was partly due to the fact that, in most instances, the strength of the assigned infantry was in no reasonable proportion to the large mass of cavalry.

Under these circumstances infantry could serve well enough as a reserve for cavalry to fall back upon, but was utterly too weak to operate in common with it and to fight. If by drawing upon the infantry it was the intention of the director that the cavalry operations were to be conducted with a view to their main object, the support of the infantry, the latter branch should have been very much stronger.

Frequently the addition of infantry was neither justified on the ground of the general war conditions, nor on account of the particular problems of the cavalry.

For the summer of 1904, special cavalry exercises, on an enlarged scale, are again contemplated. The Second Cavalry Division (Luneville) and the Third Cavalry Division (Chalons) will be assembled in the district of the Sixth Army Corps, under the direction of the present President of the Cavalry Commission, General Burnez.

As the dates of these exercises partly coincide with the corps maneuvers of the Sixth Army Corps, General Burnez is supposed to have come to an agreement with the Commanding General of the Sixth Army Corps, General Dalstein, that all bodies of troops are to be united for the maneuvers on September 4th, 6th and 7th, between the rivers Marne and Meuse. At present, the limits of the Sixth Army Corps contain, besides three infantry divisions, also two cavalry divisions, the Fourth and Fifth, and a brigade of corps cavalry of three regiments. Altogether, in this manner, twenty-three regiments, that is about the fourth part of the whole French cavalry, will take part in the exercises.

It is to be assumed that this considerable body of cavalry will not only be employed in clearing up or intelligence duties, but that the attempt will also be made to effectively use it on the battle-field.

From all this will result that, in a future war, the French cavalry will be in its proper place on the battle-field and will seek to maintain its own. Nowhere did the views of General de Negrier prevail. At presumably suitable places, and even in

cavalry circles, they were abruptly declined. Now, as heretofore, it is the desire to have cavalry on the battle-field in readiness for a charge, even, though in altered form, taking to the carbine, when it cannot assert itself mounted. That naturally very much is yet to be done before French cavalry has grown up to its task, particularly with reference to combined action with infantry, has been proved in the foregoing discussions.

In comparison with the past, the horsemanship of the officers of the French cavalry is beginning to improve considerably, especially do those officers trained at the riding school at Saumur exhibit good work throughout. It may be accepted that this progress will also be gradually transmitted to the troops.

Extraordinarily much is being done in France to improve horse breeding. In 1902, according to the official report, 18,189,658 francs were expended in premiums and prizes of which the Government furnished 2,484,225 francs, the remainder was subscribed by the departments, cities and societies. The result is obvious; Government studs as well as private studs, are furnishing the army with horse-flesh, which, in number and quality, improves from year to year.

KUHL,

Major of the Great General Staff.

TRANSLATOR'S NOTE.

This article is valuable, in that it shows just how far behind France is in the modern method of the employment of cavalry. They evidently still consider the "charge" as the very thing, giving but little value to the combat on foot, which really is the only fighting power of cavalry at this day. Though it seems that a ray of hope has penetrated the gloom, and that in future, according to the reports, French cavalry will do more fighting than playing the antiquated game of trying to ride down troops armed with to-day's exceedingly destructive weapons.

The new division into light and heavy cavalry was a forward step, which in time will be followed by abolishing the many kinds of regiments and uniforms, finally reducing that branch to one kind for business only.

It seems to me that they are still woefully in a state of backwardness, in face of all the teachings of our own Civil

War, the War of 1870 and the late Boer War. American cavalry would have been handled quite differently in the exercises herein described. General de Negrier's views are not so terribly far off as the French officers would have one believe.

The bicycle company is well spoken of. But its operations were probably limited to good roads and not cross-country service.

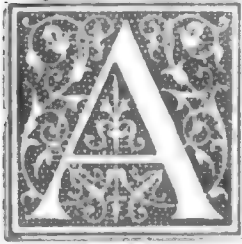
A perusal of this paper will probably call forth many different views all depending on the reader's ideas on the subject of cavalry.

C. W. FARRER,
Captain Eighth Cavalry.



MILITIA METHODS AT TELLURIDE.

BY LIEUTENANT G. DE GRASSE CATLIN, SECOND INFANTRY.



TEST case has lately come up before the Supreme Court of the State of Colorado as to the right of the courts to interfere with acts of the military while in pursuance of their duties at the place and time of insurrection.

Charles H. Moyer, an official of the miners' union and a man of much influence among the strikers, was arrested and detained in Telluride by officers of the National Guard. They held that he was aiding and inciting certain persons to commit acts of lawlessness in that district.

An application for a writ of habeas corpus was made by Moyer to the State Supreme Court. The writ was issued and in obedience to it the commanding officer at Telluride, who was one of the respondents in the case, produced the prisoner in court.

Counsel for Moyer argued that he was being illegally restrained. They stated that martial law was not in force, that an act of the legislature was essential to make it so, and that even if such an act were not necessary, the governor had not declared martial law, and hence the arrest and detention of the petitioner was unlawful except by due course of law.

An answer was made to this by the attorney-general of the State for the respondents, Gen. Sherman Bell and Capt. Buckley Wells, of the National Guard.

The court rendered an opinion on June 6, 1904, to the effect that Moyer was lawfully arrested by the military authorities while the work of suppressing the insurrection was in progress, and that till this insurrection was suppressed his restraint was not illegal. The writ was discharged and the petitioner remanded to the custody of the military.

In connection with this case it may be of interest to consider briefly the methods employed by the Colorado militia in handling the insurrection in and around Telluride. And in so doing we will have an opportunity of observing the weakness of the troops while acting subordinate to the local authorities, compared to their efficiency when the officer in command was subject only to the orders of the executive of the State.

Telluride is in the Rocky Mountains, in the county of San Miguel, and is the source of supply and means of communication of some seventeen mines, mills and other places, which were influenced by conditions of lawlessness at the time under discussion. Many of these places are almost inaccessible. The distance from Telluride to one of the near-by mines is a little over three miles, the difference in elevation is 5000 feet. The only means of reaching the Tom Boy mine is by a tunnel from the mill, some three miles long. The Tom Boy Company owns a large lake which supplies its power and which is on the farther side of a very high mountain, about five miles from the mill. Four soldiers were sent to guard this place. It was reported that in case of a heavy snow-storm it would be impossible for them to leave until spring. The only way of traveling from this point in such weather is on snow-shoes and the combination of ice and precipices makes this a dangerous feat. The Liberty Bell mine is reached by a long aerial tramway. Supplies for both these mines are sent by mule train. The roads and trails leading to many other points are steep and narrow. Under unfavorable weather conditions those who make use of them do so at great risk.

On November 20, 1903, the governor of Colorado issued an order relative to the trouble in and near Telluride. This order stated that the sheriff of San Miguel, the commissioners appointed by the governor to investigate the troubles, and others, had reported that the county was in a state of lawlessness. Certain men had united for the purpose of resisting the laws and opposing their execution. These men were attempting to commit felonies, were intimidating persons and violating property rights. Moreover, the civil authorities were wholly unable to cope with the situation. The governor therefor directed that a portion of the National Guard be sent to San Miguel County to assist the sheriff in enforcing the laws and maintaining order. Gen. Sherman Bell, the adjutant-general of the State, issued an order, the same day, governing the details of the expedition.

The next morning two troops of cavalry, six companies of infantry and details from the signal and hospital corps, all commanded by Maj. Zeph T. Hill, left Denver. They reached Telluride on the 23d, were immediately divided into suitable detachments and sent to the various stations in the county. The commanding officer communicated with and controlled

the organizations at these different points by telephone or telegraph. He limited their actions to assisting the civil authorities.

Up to this time the sheriff of San Miguel had not had a sufficient force with which to preserve order in the county. He had closed up the gambling houses and dance halls which abounded in Telluride and was closing up the saloons as fast as he could. This last he took some time in doing, as it was not possible to keep those saloons, whose licenses were paid up, from selling without an order from the county commissioners. Such an order required a majority vote.

There were frequent assemblies of men on the streets and these were characterized by disorder. The police officers were often unable to handle these town features of the strike. Many of the mines and mills had been controlled by strikers. Murder, assaults and other serious crimes had been committed. Sometimes those clearly responsible for these offenses were acquitted by local juries which had no shadow of reason for giving such verdicts.

The presence of the militia allowed the sheriff to act. On the night of the 25th, his deputies arrested the secretary of the miners' union, and five other men upon capias drawn by the assistant district-attorney. The next morning he arrested three men, one of whom was the president of the miners' union. These men were in communication with those apprehended the night before. On November 30th, thirty-eight men were gathered up by a force of deputies protected by the militia, and were brought before a justice of the peace and a police judge, on the charge of vagrancy. Twenty were discharged sixteen were fined twenty-five dollars each, two were fined thirty-five dollars each, and one five dollars and costs. The police judge suspended the fines until December 2d, with the proviso that those fined were to get to work, quit the town or be brought up again to work out their fines. This was done later in several cases, the men working on the streets guarded by soldiers and under the supervision of the street commissioner.

This "vagrancy" remedy applied in Telluride brought comparatively good results, and its effect extended into the outlying stations. On December 8th eighty-four men arrived to take the places of strikers in the mines and mills. Those who came spoke English, as most of the mine and mill owners

refused to re-employ Italians and Austrians. Contingents of new men continued to come in until some of the mines were working at their usual capacity.

There were frequent efforts made both by threats and persuasion on the parts of the strikers to keep the new hands from joining. Every day detachments of union men, at points just outside San Miguel County, boarded the trains bound for Telluride, and attempted to dissuade the "scabs" from continuing. It was reported that they had pickets on duty at the mountain passes leading from adjoining counties to the mines. These groups kept in touch with what was going on at both ends, and prevented fresh employees from using these roads in reaching the mines. On this account the authorities were glad to have the snow, for it rendered such trails impassable and left the railway and roads going to and from Telluride as the only means of entry and exit to the important points.

With matters as they were, under county control, difficulties arising from influences in other counties were hard to meet. While the sheriff of San Miguel, in maintaining order and preserving the peace, could make use of the arbitrary means and apply the harsh methods of the law of force within those limits in which the people had elected him to exercise the highest police power, yet he was as powerless to combat the evils which originated in the adjoining counties of Ouray, San Juan and Dolores as the governor of New York would be to deal with a strike in New Jersey. To settle this extended trouble it was essential that the strong hand of a common superior should be more directly felt; to whose control all the counties were equally amenable, and whose agents and instruments in establishing order should not be subordinate to an officer who was by law and custom unable to exercise authority except in a limited portion of the affected region.

On January 3, 1904, the governor of Colorado, in his capacity of commander-in-chief of the militia, issued General Order No. 1. This order rehearsed in several paragraphs the details concerning the past and present condition of San Miguel County. It noted the fact that a portion of the National Guard had been sent to aid the sheriff in the protection of persons and property, and said that owing to the limited power given to the military, the civil authorities were still unable to cope with the situation. It stated finally that a condition existed in the county bordering on absolute insurrection

and rebellion, and therefore directed the commanding officer of the forces there to use such means as he might deem right, acting in conjunction with, or independently of, the civil authorities, to restore peace in the community and enforce obedience to the laws.

On this authority Major Hill assumed full and complete control of the county and issued an order on the 3d to that effect, which was promulgated throughout. The next day another order was forthcoming directing all persons to bring whatever firearms they possessed to military headquarters, warning them not to congregate in crowds on the streets, and prohibiting their leaving their homes after 9 P. M., unless compelled by sickness or business to do so. Sentries patrolled the streets to see that this last part of the order was obeyed. The demonstrations on the streets, which had been of daily occurrence and in which the exasperation of the strikers toward the civil and military authorities had shown itself by provoking words and threatening gestures, were stopped immediately.

Wholesale arrests of disorderly characters, or those suspected of being such, were made, and enquiries into their records at once instituted. Many of those apprehended were promptly released as a result of these investigations. Those retained were the principal agitators and trouble makers of the community. In every case of retention the reasons for such action were duly noted and the names and addresses of those substantiating such reasons were carefully preserved.

On January 4th the commanding officer received authority from the governor either to deport agitators and other lawless persons, or file information against them. He used the first part of this authority only. All those apprehended and retained were taken by train to a point outside the limits of the county, turned loose and told not to return. This deportation plan eliminated largely the possibility of habeas corpus proceedings. Strict measures were taken to make it impossible for those deported to return. Outposts were established at stations near the county line and the members of these boarded all trains headed for Telluride, and ejected such persons as were recognized to have been deported.

The commanding officer established a censorship over the telegraph and telephone lines and forbade the sending of any news which might interfere with his plans. He prohibited further the despatching of any false or misleading statements.

We may say that the general plan of action consisted first, in giving protection to mines and those working in them; second, in disarming all persons carrying weapons without authority, and third, in ridding the affected district of all bad characters.

The steps taken were radical and the manner of carrying them out thorough and effective.

The district was pacified and the trouble ceased for the time being. Changes occurred, however, and these changes at times were for the worse. The measures used by the militia later were not so uniformly successful.

The methods employed in the winter of 1903 and 1904 which we have described, were to some extent influenced by the old proverb that "an ounce of prevention is worth a pound of cure." The wisdom of this proverb has not ordinarily been successful when practically applied to riots and strikes by State soldiery. This has been because the rioters have generally thought that the militia would not carry into effect the action threatened. Sometimes they have been correct in their surmises. Not only have State troops failed to enforce respect for themselves, but on occasion officers commanding United States troops have allowed strikers to throw missiles at their men and to revile and curse them with words much too profane and indecent to print. As a major of infantry, who was present at the Chicago strikes, put it, the strikers were hurling stones and showering their curses at the United States, not merely at the soldiers as individuals. A game of bluff is undoubtedly a good thing, when lives may be spared and bloodshed avoided by working it. But it does irreparable harm if, on circumstances warranting, the rifles in the men's hands are as useless as so many broomsticks.

At times, however, insurrection and rebellions affecting small sections and limited to certain classes have been quickly subdued by a mere show of numbers or by issuing orders, stern in their details, stating clearly what would be done under given circumstances. The information that immediate punishment will follow the commission of certain acts, understandingly and unmistakably impressed on the minds of those intending to commit such acts, has a deterrent effect. There is an instance of this which still remains vivid in the memory of certain older officers of the Regular Army and which perhaps will bear telling.

An infantry regiment of federal troops was ordered to quell the rioting incident to a strike affecting a Western city and which threatened to spread through three or four States. When the train in which the regiment had traveled from its post arrived at the station, the soldiers quickly detrained, and the companies formed in a solid and silent line before a congregation of several hundred men, women and children who gazed at them with hatred tinged by respect. The colonel of the regiment ordered officers' call sounded and then walked into the waiting-room, where there were some strikers. When all his officers were gathered around him he told them he had been informed that the strikers were in the habit of sneaking up on the sentries and grabbing at their rifles. He ordered that each time such an attempt was made, the man making it be killed, not wounded. He further stated that another trick was to form a line of women, get behind it, and then shoot and throw rocks. If this occurred he ordered that the men be instructed to catch the women by any part of their clothing that they could, toss them over their heads and then attend to those behind. .

This official talk of the colonel to his subordinates, which was overheard by outsiders, put an immediate stop to the disorder, rioting and bloodshed previously prevailing and from this time on not a shot was fired.

Now the problem which confronted the National Guard of Colorado was different in many of its features from the one solved so easily by the regular troops referred to. At Telluride a large part of the riotous element was alien in race, language and customs—Austrians, Finns, Italians and others. It was almost impossible to influence them, through their sense of fear and otherwise, by orders, for such communications not only had to seep through their fanaticism and hatred, but must necessarily have been translated into their mother tongue to be understood. They lived in an atmosphere of their own, hermetically sealed in, as it were, by their ignorance of our language, augmenting the intensity of their feelings, exciting their exasperation by continual meetings, where their minds were influenced and ruled by a small group of Americans, to whom they rendered a peculiar fealty. These Americans controlled them by mental superiority, by a wide experience in handling strikes, by the strength of the fraternal bond by

which their union held them and by the means of frequent and intimate intercourse.

To quell the lawlessness in this district it was necessary to eliminate the personal influence of these leaders. This was done by deporting them. I suggested to a man who had been active in this work of extermination, that the measure of deporting these men was severe. He answered that they might have been allowed to stay, but that their presence would eventually have resulted in disorders of such a nature that there would have been as many dead men as there were deported ones.





TWENTY-THIRD INFANTRY CARGADORES.

THE CARGADOR IN MINDANAO.

By COLONEL PHILIP READE, TWENTY-THIRD INFANTRY.



EARLY in August, 1904, the Regimental Commander, Twenty-third Infantry, received orders from the Commanding General, Department of Mindanao, to select seven privates and one non-commissioned officer from each company for duty in the Rio Grande Valley, Cottabato District, which was a region previously garrisoned by the Seventeenth Infantry. The Department Commander's instructions read, in terms, that the men selected should be the best men obtainable for hard work—good shots, able to swim, in short, the best eight men for extraordinary and hard service to be found in each company.

The following-named officers were, by Maj.-Gen. Leonard Wood, assigned to the Provisional Company, Twenty-third Infantry: Capt. Monroe Crawford Kerth, First Lieut. Harry S. Howland, William T. Merry, Stephen O. Puqua. At a later period, Col. Philip Reade, Twenty-third Infantry, temporarily commanding department of Mindanao, assigned, in addition to the foregoing, the following recent graduates of the Military Academy to the Provisional Company, viz.: Second Lieuts.

Arthur Wood Copp, Richard J. Herman, Wilber A. Blain, Christopher Jensvold. The Provisional Company remained in the Davao and Cottabato District, in the field, for six months. Of the original officers designated, Captain Kerth, Lieutenant Fuqua, and Second Lieutenants Copp and Blain remained constantly with the organization. At the outset, Asst. Surg. R. L. Carswell, Medical Department, was assigned as the medical officer accompanying the Provisional Company, but ill health caused his relief. Thereafter the company had such a succession of medical officers that their identification with it was not of long tenure. In the make-up of the Provisional Company, the men selected by the company commanders were, first of all, sent to the post surgeon to pronounce upon their physical fitness, also upon their proficiency in First Aid. Men rejected by the medical officer for any cause were replaced by alternates from the same company for like examination. From start to finish about two hundred men served with the Provisional Company. On the relief and return from field-service the members were subjected at Malabang to a like physical examination by the same post surgeon and his assistant. Record was kept by latter of weight, age, military service, etc., of each member of the company. The accruing data of Asst. Surgeons Geo. J. Newgarden and Chas. J. Brownlee is more valuable than mere assertion regarding the matter of effectiveness and impairment of health by means of protracted exposure in Mindanao.

After the men who were selected by the respective company commanders for duty with the Provisional Company had passed the medical examiners, they were culled further, reference being had to classification in small-arms firings, last season of practice, experience in ability in the handling of vintas, proficiency in visual signaling, hiking experiences, familiarity with rules for self-cover, etc., as prescribed in the Soldier's Handbook. The details and conditions of personal equipment were gone into. Each man was outfitted as follows: Q.M.D., one hat and coat, one pair service trousers, one undershirt, two pairs shoes, two mosquito bars, one blue flannel shirt, two pairs drawers, five pairs socks, one poncho, soap and towel; Ordnance Department, 150 rounds of ammunition, haversack with its prescribed contents, and canteen. Care was taken regarding water-boiling outfit. Ten days field rations accompanied when, 12th Aug.,

the organization left by launch for Parang, departing from Parang three days later for the region indicated. In the main, from that time until February, the Provisional Company marched. It covered thus 400 miles during the first six weeks of its organization. Its object, co-operating with other troops, was the capture, destruction or subjugation of Datto Ali and the hostile Moros under him.

Cargadores were hired in Malabang to accompany the command. It was not expected, nor desired, that the Provisional Company, or *company*, as this writing will hereafter term the organization, should exhaust itself either with unnecessary marching when no definite object was in view, or its members be required to load themselves down with any excessive amount of rations: hence ten cargadores, per squad, were desired. It was hoped, rather than expected, that in some regions chickens and a certain amount of vegetables and fruits could be procured in reasonable quantities. In regions not hostile, it was hoped, rather than expected, that food could be obtained from the natives by purchase. As the company was content to always conduct itself as though in the presence of an active and intelligent enemy—the carrying of rations by the soldiers for, say, a ten days' trip was deemed inconsistent, with due preparations against surprise, ambush, etc. The separation of detachments from the company for even a short time and distance in less numbers than twenty-five men for reconnaissance, etc., was forbidden. The country to be operated in was roadless; no highways, hence no vehicles on wheels accompanied; the region did not anywhere admit of pack-trains or pack-animals. Only a small percentage of ground had previously been gone over by American soldiers. Maps and sketches, aside from the Rio Grande's banks, were non-existent. The company expected to find cogon grass, mosquitos, morasses, chigres, foul water, jungles, leeches, dhobie itch, vinta work, bejuco entanglements, scant fuel and rations. These expectations were realized.

First Lieut. H. S. Howland, Twenty-third Infantry, has, pursuant to the instructions of the regimental commander, rendered a general report of operations during four months' service with the Twenty-third Infantry Provisional Company in the field.

Its subheads include character of the country; rafts, cogon grass or cane, guides, prisoners, interpreters, physical

ailments in campaign, mosquitos, drinking water, products of the country, vintas, rations for, and cooking on vinta trips, camping in vintas, loading of vintas, etc. all of which details are unique to the major portion of foot troops and would be valuable to the successors of the Seventeenth, Twenty-second, Twenty-third Infantry, Fourteenth Cavalry, Seventeenth and Eighteenth Battery Light Artillery; but our purpose and object of the present screed is cargador service in Mindanao.

WEIGHTS OF RATIONS.

One hundred cargadores are necessary, at forty pounds per cargador, to carry ten days' full rations for one hundred soldiers. Such weigh 3950 pounds. Add four cargadores for the kitchen, four for officers (one to each), two for the hospital, and one to carry a tent fly: total 111 cargadores. For carrying the rations for these cargadores and for themselves, eighty-seven additional cargadores are necessary.

Leave behind the baked beans, tomatoes and jams, the total weight of ten days' rations is reduced to 2387 pounds; the weight to be carried for a ten days' march of one hundred men with the reduced rations, reduces the number of cargadores to five for each four soldiers, or 126 cargadores for the company. The number of cargadores for the kitchen, officers, hospital, and tent fly remains constant.

If a still further reduction in the number of cargadores is necessary, it can be effected by carrying only half rations for the latter. One day's rations for a cargador is 17.4. For carrying ten days' reduced rations for 100 hundred men and half rations for the natives, ninety cargadores would be necessary.

The number of cargadores might still be reduced by apportioning out to each cargador his ten days' rations, half or full, and making him carry them himself instead of having the native rations carried in bulk by cargadores employed for that particular purpose. In this way the number of cargadores would be limited to those actually engaged in carrying soldiers' rations and camp equipage, that is, a total of seventy-one cargadores. Giving a Moro his whole ten days' rations at once tempts him to enter into a competition with nature in an effort to eat it all up in a few days, and thus an officer will find all his cargadores out of rations before the end of the hike. Moros without food are useless. Lieutenant Howland says

that it is a safe rule to go by to calculate forty pounds per cargador of the reduced field rations and the full native rations carrying the latter in bulk. It is a sufficient load for a soldier to carry with his field-equipment, a shelter half-roll and a lunch in the haversacks. The trend of opinion is showed by the writer that a kind of back-pack improvement of the knapsack type 1860-5 will be less of an incumbrance than the Civil War pattern, and more of an assistance in tropical service than a wobbling haversack.

CARGADOR PACK METHODS.*

A Moro cargador can arrange his own load better than any American can arrange it for him. He, from infancy, is habituated to quickly construct a cage, or back basket, in which to tote potatoes, brass dishes, pans, fruits, rice-bags; is an adept in weaving bejuco. The Moro basket is flat on one side, provided with the loops necessary for shoulders and head. The position of the cargador in the march is well toward the rear with one or two squads behind them for a rear guard, while the men of another squad are distributed among them. Each man has charge of a certain number of cargadores, it being his duty to keep them moving along, prevent straggling and unnecessary delays.

In battalions, the cargadores usually march between the third and last company, the quartermaster-sergeant and cook of each company marching with, and having immediate charge of cargadores of their company.

When heavily loaded, one rest per hour of ten minutes is insufficient for the cargadores, but two rests per hour of five minutes each satisfies them. No matter how loaded, heavily or lightly, cargadores prefer short and frequent rests.

He has no means of carrying water. It is not necessary to stop when crossing streams; the cargadore merely stoops over, and making a cup of his hand, obtains enough to satisfy his thirst by scooping up the water.

*The accompanying illustrations show a group of five (5) Moros employed as cargadores at Malabang, Mindanao, P. I., Aug. 12, 1904, to accompany the Prov. Co., 23d Infantry. Each cargador has packed his cargo as best suited him. One carries a fifteen (15) gallon galvanized iron metal-topped water boiling can; interior of the can is filled with kitchen utensils. Another carries a twenty-five pound tin of hard bread, plus two tins of bacon, each containing nine (9) issue bacon. Another carries four 9-lb. tins of bacon. Another packs a burlap grain sack, partly filled with tomato cans.

The strips uniting these packages are of bejuco (native rattan), one hand loop and two arm-pit loops to each pack. The loops are also of bejuco. Background shows cogon grass.



BOBOY CARRIAGES PACKED FOR THE MARSH

With Moros, the desire to possess firearms is a mania. Some of the frequent thefts of U. S. Mag. cal. 30, arms, also of revolvers, are due to cargadores. A Moro who has been broken in the work of a cargador has, occasionally, a spirit of camaraderie for the soldier; but he will assassinate him all the same if he cannot obtain his gun by any other way. They are not known by name in all cases, are tagged about the same way that General George Crook tagged his Indian scouts when he commanded the Twenty-third Infantry in its Arizona campaigns. The Moro is known best by his number. This number may be in a tag of canvas attached to the cargador.

From among the cargadores the most intelligent one, to whom the others are likely to show the most obedience, is selected as boss. It is his duty to look after the others, to represent them before the commanding officer if they have any complaints to make, to see that they all do their work, and to exercise a general jurisdiction over them. He, in turn, is looked after by the quartermaster-sergeant. The boss is not required to carry as large a load as the ordinary tao; to do so, lowers him in the eyes of his fellows; sometimes he carries no load at all.

Four cargadores, usually strong men and intelligent, are selected for the kitchen. They carry the kitchen effects on the march and work about the kitchen in camp. Two cargadores one assigned to the hospital corps, one to carry the medical supplies, and one to carry the surgeon's effects. One cargador is assigned to each officer, to carry the latter's roll, assist in putting up the tent fly, wash and dry clothes, etc. These assignments are generally permanent, because when a cargador has once learned the duties expected of him, he performs them satisfactorily. When camp is reached, the officer's cargador clears a space for the tent fly, gets water, etc. In designating a camp for the cargadores a spot is indicated some distance away from the men, usually near the kitchen. In camps on rivers the cargadores are always camped down stream below the kitchen fires; they are required to have their own fires and they should always do their own cooking. No cargador is, as a rule, allowed to carry a bolo, kriss, kampilan, barong, or other weapon. Sometimes the cargador boss is allowed to carry one of these because to a Moro, the possession of a weapon is a sign of personal authority and prowess.

THE CAVALRY HORSE OF THE PRESENT AND THE FUTURE.

By "ARABIAN."



THE war between Russia and Japan has demonstrated unexpected, not to say, astonishing, ability and resources on the part of the Japanese.

Although these little Orientals are not horsemen, they have recognized the value of the horse in warfare, and have endeavored to make good the lack of horses by large importations from abroad. So far has this country been depleted that contractors have ceased to export, only because horses of the required type can no longer be obtained. The Boer War had already drawn heavily on our stock, so that it is no wonder the country is no longer able to meet the demand for this class of horses.

What are we doing to make good for the loss—and what more vital element is there in the equipment of an army than the supply of horses because of the time required to mature them.

A battle-ship can be built in two years, guns manufactured in a few months, other equipment in less time, soldiers mustered and drilled in a few weeks, but horses require six years to be prepared for service.

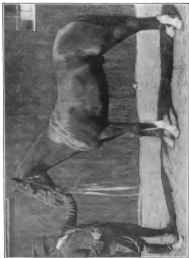
Gen. Henry T. Allen in his article on "Cavalry Mounts" in the January number, 1904, of the JOURNAL OF THE MILITARY SERVICE INSTITUTION suggests that the Government make contracts with breeders to supply horses of a cavalry type and bred from stock suggested or selected by the War Department.

In the May number of the same year was another article on the same subject commending General Allen's plan and demonstrating the value of Arab blood for the purpose.

In a recent issue of *The Rider and Driver*, I find the following which has a bearing on the subject:

"Nime" was out of Nagli by the phenomenal Arabian "Maidan" who came to India before "Kismet" and raced as a two-year-old.

From two to five he was unbeaten; as he could win no more, he was sold to Captain Brownslow, of the Seventy-Second Highlanders,

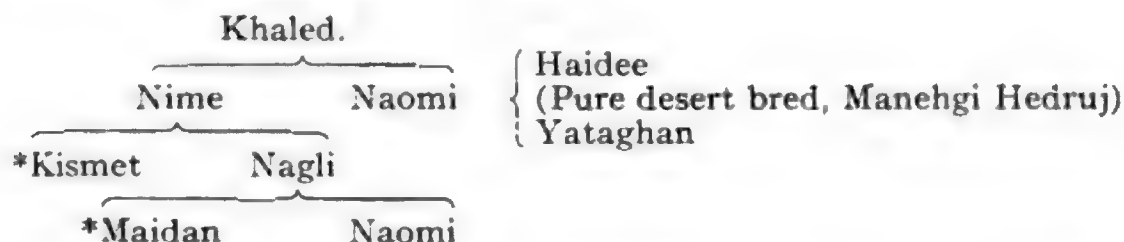


— 300 —

(For predators, see accompanying text.)

who weighed 260 lbs. with his equipment, and who rode him as a charger for twelve years. Captain Brownslow was killed before Kandahar at the end of the famous march of Lord Roberts to Kandahar from Kabul through the Afghan Mountains.

"Maidan" was then bought by the Hon. Eustace Vasey, and though seventeen years old and having done work enough to kill three ordinary horses was taken to the south of France where he won steeplechases at Pau until twenty-three. He then was taken to England where he won in many races. At twenty-four he broke a leg and had to be killed. Prior to the accident which caused his death he was absolutely unblemished. It is from these progenitors that Khaled, perhaps the leading horse in the Huntington stud, is descended. His pedigree is as follows.

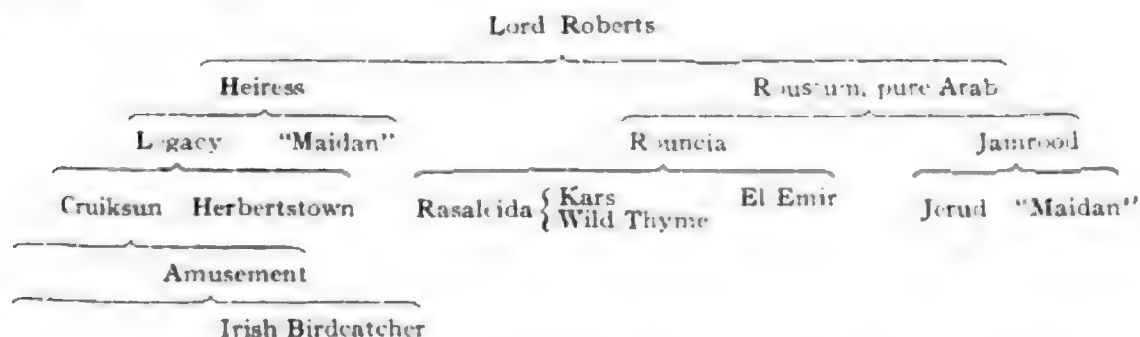


All ancestors pure desert-bred Arabians of the family of Manehgi Hedruj.

Khaled stands a full fifteen three. We unhesitatingly affirm and challenge the world to disprove that this horse is the noblest Arabian in the civilized world, as he is known to be the largest. His offspring, whether pure Arab or otherwise, inherit his wonderful conformation, intelligence, hardness of hoof, sinew and muscle."

Here then we have in Khaled a horse that seems especially suitable on account of his own merits and his breeding from which to produce the highest type of cavalry horse.

I add the pedigree of his brother in blood, Lord Roberts,† who is twice descended from the great "Maidan," and who is about the same size as Khaled.



Have we any horses in our army like "Maidan" that could stand up under such work for twelve years, and then be a winner, in flat races and steeplechases with the best horses of the world?

*The unbeaten racers.

†See tailpiece.

Can breeders do better than take these two horses, or their equals, if there be any, and conserve their rich blood heritage to produce for America the cavalry horse of the future?

Inasmuch as a horse should have a special preparation for his work, and as this can best be accomplished by men in the service, it would seem the best plan to have the breeders deliver the colts as yearlings or two-year-olds, so that they may be early accustomed to the work they have to do. Also from the point of economy it would be the better way, for the Government cannot only do this work better, but at a minimum expense, at the large military reservations at Fort Riley and other posts.

Has anyone a better plan to suggest than this of General Allen's for the breeding of the best type of horses for the army?



"LORD ROBERTS."

DAYS FIGHTING



Japanese Sixth Division was engaged in an attacking movement. Seventh was engaged on the right, and the Third Division in the rear had followed his already been described on these pages.

FIELD AND SIEGE OPERATIONS IN THE FAR EAST.*

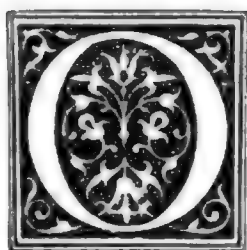
BY COLONEL WILLIAM R. LIVERMORE, U. S. A.

CORPS OF ENGINEERS.

II

BATTLE OF THE YALU.

[Japanese, 45,000 or 50,000. Russian, 15,000 or 20,000.]



ON the 25th of April, the Russian gunboats made demonstrations near the mouth of the Yalu.

On the 26th, the Russians were driven from the island of Chiu-ti-tao. Eight Russian heavy field-guns were seen by the Japanese on Hu-Shan.

On the 28th the Russians had withdrawn to the right bank of the Ai-ho, keeping up a desultory fire of artillery.

On the 29th they withdrew from Chin-ting-tao and the Twelfth Japanese Division commenced to bridge the Yalu at Shin-kon-chin. Before the troops and guns advanced, every point of the road where it might have been visible from the Russian side had been screened by fences of cornstalks and of young trees cut near the roots and set in the ground.

On the 30th the Twelfth Division crossed. The Japanese occupied Cheng-Chang-Tai. The Japanese artillery silenced the Russian artillery, and the bridge over the main stream of the Yalu at Chiu-ti-tao was completed. The Russian artillery took the position on the islands shown on the map. The gunboats made demonstrations up the river as far as Antung.

May 1, 7 A. M. The Japanese advanced. The gunboats bombarded Antung. We cannot do better than quote the language of Major-General Ishimoto, the Japanese Vice-Minister of War: "Early on the morning of May 1st the Twelfth

*Continued from May JOURNAL.

Most of the information upon which the descriptions of the battles from the Yalu to the Sha-ho are based has been taken from the *Russo-Japanese War*, published monthly by the Kinkodo Co., Tokio. The rest has been taken from the reports in the *London Times*, Fred. Palmer's "With Kuroki in Manchuria," Douglas Story's "Campaign with Kuropatkin," T. Cowen's "Russo-Japanese War," articles by J. F. Millard in *Scribner's Magazine*, *The Illustrated London News*, *London Graphic*, *L'Illustration*, *United Service Magazine*, *Revue d'Artillerie*, *Journal R. U. S. Institution*, *Kriegstechnische Zeitschrift*, *Mittheilungen über Gegenstände des Artillerie und Geniervesens*, *Revue du Genie Militaire*, Series of Lectures on the Russo-Japanese War, by H. D. Robson, etc., etc.

Division crossed the Ai-ho and attacked the left wing of the enemy at Chin-lien-cheng. The place was sixty meters above the river bed and in itself a stronghold. But the Twelfth Division with their mountain artillery delivered such a heavy fire on the flank of the enemy that the latter's artillery became utterly demoralized, and could offer no resistance to the crossing of the river by the Guards and the Second Division in front of Chin-lien-chang, from which the Russians withdrew at 9 A. M."

Another account says: In the early morning of May 1st, artillery fire from Wiju having failed to draw fire from the Russian trenches, the Guards and Hishi's Second Division advanced across the river assisted by fire from the island of Chin-ting-tao. On the troops reaching the opposite bank and continuing their advance across the open, the Russians opened a heavy fire from their trenches some 800 yards distant. Seeing the difficulties of further continuing the advance in this direction, Nishi cleverly withdrew his men to the cover of the river bank, and changing his direction to the left made a flank march in the presence of the enemy down the river.

Having got to his required position, he made a new attack on the conical hill which was not strongly held by the Russians, and which Nishi saw would give him protection from fire and a foothold on the right of the Russian position. Frederick Palmer, who watched this battle from Wiju, says: "At either side of the Ku-lien-cheng trench were ravines leading up to either end. Pressing under cover of the heights we soon saw a column passing up either ravine. The extreme left of the line filed into the little town of Ku-lien-cheng.

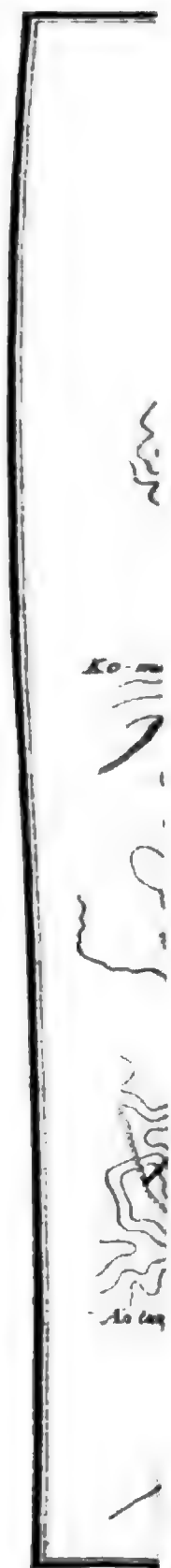
Nishi's attack was successful and the Guards division were thus greatly assisted in their advance against the Russian center. The position was occupied and the Russians retired.

NANSHAN.

[Japanese, 45,000. Russian, 15,000.]

The fortifications were of an obsolete type although protected in front by *trou de loup* wire entanglements and mines.

The artillery fire commenced at 5.30 A. M.; and at 6 A. M. from gunboats. Eventually six torpedo-boats took the Russian position in the flank and rear. The Russian artillery replied, but after three hours its fire greatly slackened. The





BATTLE OF MARSTON

Japanese infantry advanced with alternate halts under a deadly fire up to about 500 yards of Russian advanced line.

At 11 A. M. all the unsheltered guns of the Russians had been silenced, but two batteries of new field-guns had already retired to Nau-kuan-ling from which position they fired on the Japanese throughout the day.

In the forenoon the Russians supported by the fire of a gunboat, made a counter attack on the Japanese fleet. Four guns at Ta-fang-shan continued to fire against the Third Japanese Division until 7 P. M.

Up to 5 P. M. no opening had been made and the Russians threatened to surround the Japanese left flank. The First Japanese Division rushed forward and suffered fearfully. But the fleet renewed its heavy fire on the rear of the left wing, which also became a focus for the fire of the Japanese artillery and infantry. An advance was made along the whole line. The right flank waded through the water up to their waists and completely turned the Russian flank, which had thus become untenable, the Japanese inflicting fearful losses with the fire of infantry and machine guns.

Considering the disparity of the forces and the advantage which the Japanese held from the command of the sea there is nothing marvelous about this battle. If the Japanese had been properly led they could have accomplished the same results without the wanton sacrifice of lives.

TI-LI-SSU OR WA-FANG-OA.

[Japanese, 40,000. Russians, 30,000.]

It will be remembered that General Stackelberg was ordered to march to the relief of Port Arthur and it is understood that this was against the judgment of General Kuropatkin. His army amounted to about 30,000 men and he was met by General Oku with 40,000 marching from the south in three columns and from the west in one. On the night of the 14th-15th of June, the position of the Russian Army and of the Japanese center were as shown on the map. From 3 P. M. of the 14th until sunset, the Japanese artillery had been bombarding the Russian position.

On the 15th General Oku ordered the right column to firmly hold the line between Sung-chia-tun and Weng-chia-tun and during the night the central column was sent from Wu-

chia-tun to occupy the hills west of Ta-yan-kou. On that morning there was a dense fog. Fire was opened at 5.30 A. M., and as the firing on both sides increased in strength, a portion central column, posted north of the Fuchou River, found itself gradually hard pressed, but was steadily advancing when a detachment of infantry and artillery, which had been hurrying from Fuchou since daybreak, arrived on the heights west of Wang-chia-tun at 9.30 A. M. and co-operating with the central column succeeded in repulsing the Russians in the vicinity of Ta-fang-shen at 11 A. M. The Russian artillery stationed on Lung-tan-shan and on the heights of Lung-wan-miao poured a heavy fire on the central column and the detachment from the neighborhood of Fuchou, but the latter pressed forward climbing cliffs and precipices.

Meanwhile as the Japanese were turning the Russian right, the Russian left was turning the Japanese right.

The Japanese right was twice reinforced from the general reserve of the army, but its position soon became almost insupportable. A cavalry detachment, however, arrived on the scene and threatened the left and rear of the Russians who were now almost surrounded by the Japanese but made a vigorous resistance, and on receiving reinforcements tried to regain their advantage by repeated counter attacks.

The main force of the left column of the Japanese occupied a position facing the north at Kao-chia-tun, covering the left wing.

At 10.50 A. M., learning that seven or eight hundred Russian infantry were retreating from Ma-chia-fang-chen toward Wu-chia-tun by way of Hsi-lung-kou, two companies of infantry and a battery of artillery were sent out on the heights east of Lung-chia-tun to intercept the retreating Russians. A little past 1 P. M. the Russians fell into the ambush, sustaining great loss.

At 3 P. M. the Russians were forced to retreat, but the ground was unsuitable for effective pursuit and they passed the night on the battle-field.

The most interesting feature of this battle was the employment of the artillery, which is described by Millard, the correspondent for *Scribner's*, on the side of the Russians. He estimates that the Japanese had altogether 108 guns along the line that had a front of over three miles. The Russians had sixty-four guns; thirty-two of them in two redoubts on the higher

part of the hill, while the remainder were without protection except that afforded by the uneven terrain.

At 9.30 the Japanese artillery opened all along the line and, fifteen minutes after, not a single Russian gun fired another shot. The Japanese used both shrapnel and percussion shells, and both were terribly effective. The Russian redoubts, which were of the old fashioned kind, offered scarcely any protection from the shrapnel, while the new high explosive used by the Japanese caused fearful havoc, ripping up the entire top of the ridge like a plowed field. "The scene," says Millard, "during the frightful cannonade was typical of modern war. Looking toward the Japanese lines nothing was visible except the brownish green slopes of the hills ribbed by the darker shading of the gorges. Nowhere within the hill-bound perimeter of vision the slightest sign of the enemy."

In this battle the Japanese used entirely indirect fire. So the Russians at Wa-feng-oa (Te-li-ssu) were for hours under a terrific artillery fire yet not once did they catch sight of a Japanese gun.

As soon as the Russian artillery was silenced, the Japanese fire was shifted to other objects. When the Russians began to retreat, the position of each column was detected by a cloud of dust, and the position of the railroad station by the smoke of the locomotives. The Japanese artillery concentrated its fire on one after another until it was supposed to be routed or destroyed. One regiment just arrived from Europe lost 900 men from this indirect fire within half an hour from the time they stepped from the train.

KAIPING AND TA-SHI-CHIAO.

[Japanese, 50,000. Russians, 30,000.]

After the battle of Te-li-ssu, the Russians retreated to Kaiping and on the 8th of July were occupying the district between Kai-ping and Hai-shan-chai and the highland north of Shi-tai.

On the 9th of July they were driven back by superior numbers of the Japanese and took up a position south of Ta-shi-chiao.

On the 23d the Japanese took a position from Haia-tang-chih to Chu-chia-tun. The Japanese had about 50,000 men; the Russians about 35,000.

The Russian artillery fired on the enemy at Wu-tai-shan and



the Russian cavalry advanced from Ta-ping-shan to Chang-i-tun. The Russians were strongly entrenched.

Before the dawn of the 24th, the Japanese right wing advanced on Ta-ping-ling. At 8 A. M. the armies occupied the positions shown on the map. The Russian artillery on the left of the line fired on the Japanese position by indirect fire, to which the Japanese could not reply. Its infantry, therefore, had to occupy a covered position and await an opportunity to attack. Under cover of the artillery at Hwa-erh-shan, the Japanese infantry occupied the heights north of Sun-chia-tun at 10 A. M., but were unable to go further on account of the fire of the Russian artillery at Ching-shih-shan and Wang-ma-tai.

The Japanese left also advanced a little and its artillery at Ta-ping-chuang engaged in a severe duel with the Russian artillery at Wang-ma-tai.

The Russian position covering the ridge of the heights commanded the view of the ground over which the Japanese advance must be made. The entrenchments which were made in terraces had loopholes and overhead cover and were defended by abatis wire entanglements and mines. The artillery had taken positions from which the guns could not be seen by the enemy, whereas the Japanese guns could not be concealed. This arm suffered severely and was ordered to advance regardless of losses, but was driven back with severe losses. The Japanese artillery ceased fire at sunset, the Russian, at 9 P. M.

The chief interest in this battle lies in the fact that it was the first in which the Japanese made a successful night attack. At 10 P. M., the majority of the infantry of the right wing advanced and captured the advance works near Ta-ping-ling but with heavy losses, and then at 3 A. M. another fort, and finally occupied the heights near Shan-si-toa. Before daylight the Russians evacuated the position. On the Japanese left the cavalry protected the flank and rear against the Russian cavalry and horse-artillery.

YU-SHU-LIN-TZU AND YANG-TZU-LING.

[Japanese, 60,000. Russians, 30,000.]

YU-SHU-LIN-TZU.

In the middle of July, the Russian Army had been considerably reinforced and sent out a force of about 30,000 men to confront the First Japanese Army under Kuroki. On the night

of the 31st they occupied the lines of elevations indicated on the map. The Japanese decided to attack the Russians before their preparations were completed.

The ground at both Yushu-tin-tzu and Yang-tzu-ling is cut up by steep mountain ridges and deep valleys. The Russians had fortified their positions by lines of earthworks and redoubts.

The right wing stationed about three battalions of infantry in the neighborhood of Lao-mu-ling to guard the right flank. The remainder advanced in two columns—the right column at daybreak of the 31st attacked in front and flank the Russian advance guards on the heights about 2000 meters ahead of the enemy's main position, which they occupied at 8.50 A. M.

While the Japanese were awaiting the arrival of the left column, the Russians made several attacks but were repulsed each time.

The left column encountered about two regiments of the Russian infantry at Pien-ling at 6.35 A. M. and repulsed them after a severe engagement. A column which started from Hsia-ma-tang at 1 A. M. attacked about a battalion of Russian infantry at 8 A. M., dislodged them and pursued them toward Pien-ling and thus came upon the flank of the Russian column which was retiring from Pien-ling and fired on it at a distance of 200 to 1000 meters, putting it to route. Afterward this detachment attempted to advance on the right of the enemy's position near Yu-shu-lin-tzu but without success, owing to the difficult nature of the ground. It passed the night in the neighborhood.

At dawn of August 1st, the Russians at Yu-shu-lin-tzu commenced to retire and the Japanese occupied Lao-hu-ling at 9.40 A. M. The left column came up on line to the south of the right but too late to take part in the pursuit. On the morning of August 1st, the Japanese drove the Russians from their new position at Li-pu-ling.

YANG-TZU-LING.

At dawn of the 31st, the left wing of the Japanese began its advance against the Russian positions at Tawan and Yang-tzu-ling, but the frontal attack made no progress at all until noon. The detached bodies sent to outflank the enemy advanced over hills and valleys and reached the position indicated on the map about noon. The Russians evacuated their first line, which was occupied by the Japanese, at 3.30 P. M.

At a little after 4.00 P. M., the Japanese advanced to the attack of Yang-tzu-ling but were unable to carry the position until 7 or 8 A. M., on the 1st of August.

LIAO YANG.*

[Japanese, 220,000. Russians, 200,000.]

The Russians had fortified the line of hills extending from the Tai-tzu River along the crests of Han-po-ling, Pa-pan-ling and Kung-chang-ling via Ta-tien-zu to Ta-hsi-kou, thence westward to Hsia-fang-shen and An-shan-tien on the railroad and to Teng-ao-pu in the plain beyond.

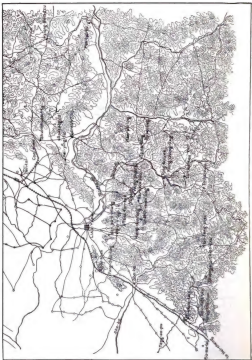
At midnight of the 25th, the Japanese Right Army under Kuroki carried the first line on the heights of Kung-chang-ling, and the neighboring mountains, at the point of the bayonet, but it was not until the next night that the Russians were finally driven off the heights. A similar night attack on Hung-sha-ling was unsuccessful, but in the evening of the 27th, after a heavy fight of infantry and artillery, the Japanese were in possession of the heights east of the Tang-ho from Hung-sha-ling to Ta-hsi-kou.

Meanwhile the Central Army under Nodzu had advanced east of the railroad to a line confronting the Russian position, and extending from Ssu-chia-tun to Shang-shih-chiao-tzu, and the Left Army under Oku to a line from Hou-chia-tun to Suma-tai. This delay of two or three days enabled Kuropatkin to make his arrangements to meet the attack or to concentrate a heavy force on the Japanese right.

August 28.—On the 28th, the first column of the Right Japanese Army reached the Tai-tzu-ho, the second carried the hills north and west of Anping, and the third those west of Tang-ho-yen. The Russians held a strong position at Ta-shih-men-ling. On the night of 27th–28th, the Russians evacuated the position at Anshan-tien and fell back north of the Sha-ho hotly pursued by the Japanese Central and Right Armies.

August 29.—The Russians (probably the Third Siberian Corps) crossed the Tai-tzu-ho by a military bridge near the mouth of the Tang-ho. They were also driven from Ta-shih-men-ling and fell back to a position north of Meng-chia-fang

*The ground work for the plans of the Battle of Liao Yang is taken from the "Russo-Japanese War" of the Kirkodo Co. but the troop positions are original and based upon all published information accessible.



BATTLEFIELD OF LACONAR

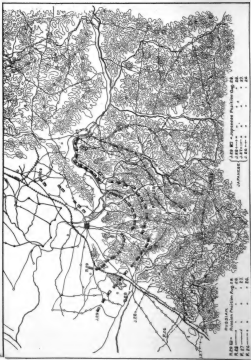
and Tayuchi. Kuroki's second column advanced to Ta-shih-men-ling and Shi-tan-tzu, and the third to Hsu-chia-kou. The Russian right fell back to its strong position extending from Shou-shan on the west along the hills south of Feng-chia-tun, Hsia-li-tun and Tsao-fan-tun, with a second line of the two hills west of Nan-pa-ti-ching. The Russian corps were disposed in the following order from right to left: First Siberian, Fourth Siberian, Second Siberian, Tenth European. Nodzu and Oku pursued. Nodzu's right column came up on Kuroki's left, and his left column on Oku's right.

The battlefield is thus described by the correspondent of the *London Times* who accompanied Oku's Army.

South of the Tai-tse River, east, west and south, the approaches to Liau-yang are through the flat, rich alluvial plain of the Liau. Where the soil is so rich in the vicinity of a town it is easy to understand that this great belt of plain is highly cultivated and thickly dotted with groves and villages. At the period we are describing, the roofs of the houses and the tops of the trees just peeped above waving heads of the ten feet millet. This plain is bisected by the railway running north and south for six miles until it reaches the rib of hills which is named after the village of Sa-san-po, lying at its base. This rib, which stretched away to the east until it mingled ten miles away with the underfeatures of the heavier country, was the first position south of Liau-yang which the Russians had prepared against the Japanese advance from the south.

The ten miles of front form a faint crescent, of which the horn conterminous with the railway is thrown further back than the other. For some occult reason, although this rib stood obviously defined as a military position, along its whole length the Russians had elected to prepare only half of it—namely the $4\frac{1}{2}$ miles of the crescent conterminous with the railway. The prepared position consisted of the five most western excrescences of the crescent. These five hills for the sake of easy definition, reading from the right, we named in succession Gibraltar, Grassy Hill, Green Hill, Brush Hill and Bare Hill.* Gibraltar, as its name suggests, is a great, rugged rock rising sheer from the Liau plain, 350 feet to 450 feet above the level of the railway, which passes close to its western base. It was crowned with a Chinese watch-tower, which served as an admirable observation post for the whole position. Even the rugged face of this commanding hill was cut with trenches, while at its southern base, in an angle made by the railway embankment, lay a walled village which the Russian engineers had cleverly loopholed and defended. The next link in the chain was Grassy Hill, an insignificant shoulder of turf with natural glacis which gently rose to a sky-line of 100 feet. The trenches cut in this slope covered the main Hai-cheng, Liau-yang road, which made its way over the crescent east of Grassy Hill. From this road another glacis sloped upward. This was Green Hill, a peak 200 feet high, the steep face of which was cut with a double tier of turf-revetted trenches. The position sank to a long, low saddle, which at its lowest could not have been above 50 feet. Half a mile of saddle, and then

*Vide Sketch.

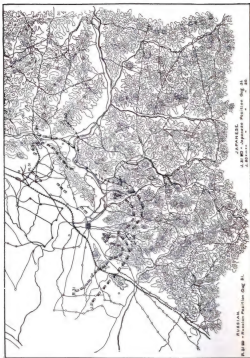


BATTLE OF ILIAD-TASOG—1

(Scale: 1:100,000)

the left of the Russian position. This was a long hog's-back ridge, which we named Brush Hill, from the fact that it was covered with undergrowth. At its highest point this ridge was 20 feet, but it sloped down to the east and ran into a water-cutting, through which passed another of the so-called Liau-yang roads. In front of Brush Hill, and projecting from it, was a lower conical hill, which was likewise faced with brush. This we called Bastion Hill, and it played a very important part in the defense. With Brush Hill the Russian scheme of prepared works came to an end, in spite of the fact that the continuation of the crescent, a great scarp-topped hill which we called Bare Hill, was obviously the point of least resistance in the whole Russian line. But 2000 meters in the rear of Brush and Bare Hills was another low ridge of rocky excrescences, and this was heavily intrenched, but all the broken country which marked Bare Hill's connection with the heavier hills and the loftier spurs forming the left horn of our imaginary crescent were not prepared. In a word, in a natural position of ten miles front the Russians only prepared the four and one-half miles nearest the railway for defense. This four and one-half miles, however, had had every device known to modern engineers in the matter of earthworks used upon it. Here there were no shallow trenches and death-trap citadels as at Nan-shan. Wherever the contour of the position required it a double tier of trenches had been cut into the hillside, one low down to give scope to the flat trajectory of the modern rifle, the other higher up, but well below the skyline. The trenches, which were 4 feet 6 inches deep, and narrow, had had their front carefully turfed, so that it was, at artillery range, almost impossible to distinguish the parapets. Each section of the defenses had its covered way leading to commodious splinter-protect cut into the reverse of the position. From the foot of the position, for 1200 yards along the whole front, the millet had been cut, while there was no portion of the actual approach to the position that had not been prepared with obstacles. At all the salients these obstacles took the shape of a honeycomb of deep pits below and barbed wire above. Round the base of Bastion Hill and passing up the western slope of Bare Hill this pitted entanglement was 12 feet broad, while to add to the terror of the assault contact mines had been added. It will be seen, therefore, that Kuropatkin's defended position was, roughly, as follows. A line of hills, four and a half miles long, and lying east and west seven miles south of Liau-yang. From the left of this position a sudden turn to the northeast, with three prepared positions in the interval of plain which lay between it and the Tai-tse River. From the Tai-tse the Russian position ran north, following the course of the stream. Roughly, the entire Russian front must have been twenty-five to thirty miles, and formed a right angle of which at first Brush Hill or the position behind it was the angle. Then over and above this first line of defense Liau-yang itself had been surrounded by a succession of earthworks in the plain, which were destined to be Kuropatkin's second line of defense; and when they became so, then the bifurcating point of the Tai-tse, east of Liau-yang, became the angle.

August 30.—On the 30th Kuroki began his flank march to turn Kuropatkin's right and cut off his retreat by railroad to the north. At midnight of the 30th-1st, most of his first column crossed the Tat-tzu-ho by a pontoon bridge, while the remainder



RUSSIA.
R. 100 = Russian Position Aug. 31.

JAPAN.
J. 100 = Japanese Position Aug. 31.
J. 200 = " " " "

BATTLE OF LIAO-YANG.—II.
(Aug. 30-31, 1904.)

and the second column followed. The left wing of the third column came up on the right of that column on the east side of the "Peking" road. Nodzu's right column carried the height south of Tsao-fan-tun, and the Twenty-first Regiment of his left column, forming the extreme right of Oku's army, effected a lodgment on the slope of a hill south of Hsin-li-tun. Oku made a succession of frontal attacks along his entire line, which were repulsed with fearful carnage. He attempted to turn the Russian right but was met with strong opposition northwest of Shou-shan.

August 31.—On the 31st, Kuroki's second column crossed the Tai-tzu-ho and the first column crossed toward the Yen-tai coal mines. Before dusk Kuroki had occupied the heights from Kwan-tun to San-tsa-kou and Shiu-chuan.

The hills to the west were occupied by the Cossacks and by advance guards, probably of the Third Siberian Corps. Orloff with thirteen battalions was ordered to hold the position from the Yen-tai mines to Hei-ying-tai, but he had not arrived.

Oku repeated his bloody attacks by night and day all along his front without effect, but another attempt to turn the Russian right was repulsed at Pe-tai. Oku reinforced Nodzu's column on his right and the Russians here fell back on their second position near Nan-pa-li-chuang. At midnight they withdrew from Shou-shan and fell back on Liao Yang. Kuropatkin, judging from the fact that Kuroki's attack on his left wing on August 30th and 31st was far feebler than on the center and right wing, inferred that Kuroki's main force had turned his left wing and was about to cut his line of communications, withdrew his troops to the final position two or three miles from Liao Yang, and concentrated all available forces against Kuroki.

September 1.—The Tenth Corps crossed the Tai-tzu-ho. The Seventeenth, and Orloff with part of the Fifth, advanced to the support of the Third. Kuroki made but little progress. A Japanese column on the extreme right, which had crossed the Tai-tzu-ho at Pen-shi-hu, drove the Russians northward toward Hsiang-shan-tzu.

In the center the Japanese advanced to the north of Ya-yu-chi and on the left to within about five miles from Liao Yang.

September 2.—September 2 Kuroki carried the heights from the coal mines to Hei-ying-tai. Orloff attacked him from the north but was driven back to the west. Kuroki was driven

back from the hills southwest of Hei-ying-tai. Kuropatkin endeavored to regain the hill at Hei-ying-tai, but though partially successful was unable to maintain it. The Japanese center and left closed in toward Liao Yang.

September 3.—Kuroki was barely able to maintain his position and was obliged to send for reinforcements. Nodzu and Oku bombarded the position at Liao Yang.

September 4.—Kuroki's third column crossed the Tai-tzu-ho and came up on his left, driving the Russians from the hill 131 southwest of Hei-ying-tai. The Pen-shi-hu column came up on his right. The Russians were driven from Liao Yang.

September 5.—Kuropatkin retreated toward Mukden, hotly pressed by Oku and Nodzu in the rear and by Kuroki on the flank.

Liao Yang was the first of three great battles, either of which would compare favorably in magnitude and interest with any battle of ancient or modern times.

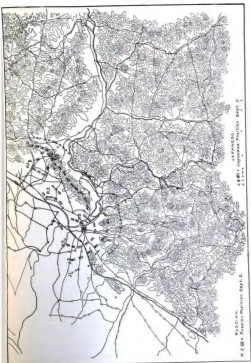
The past thirty years have been years of invention in which the efficiency of weapons has been materially multiplied, and it is interesting to note whether their effect has been similar to what had been predicted.

The fight for the outlying hills on the 26th and 27th demonstrated the necessity and practicability of night attacks. Oku's repeated attacks by night and day on the Russian position at Shou-shan demonstrated the impracticability and folly of attempting to carry a properly prepared position by a frontal attack. The success of the left column of Nodzu's army forming the extreme right of Oku's attack showed the advantage to be gained by turning an unprotected flank of a fortified position.

Captains Reichmann and March, who accompanied the Russian and Japanese armies respectively, explain the use made of deep intrenchments, and Captain Reichmann points out the effect of the fire of 200 quick-firing guns on a front of 1000 yards in the attack on Shou-shan on the 30th. The armies of continental Europe have recently been taught that intrenchments are useful for the defense, but that they should not be permitted in the attack because they would destroy the *elan*.

The *elan* and the *personnel* of the left of Oku's army were destroyed while the division on his right was patiently digging its way around the Russian flank.

The question is constantly asked why 220,000 Japanese



drove out 200,000 Russians from a strongly intrenched position, when, with modern weapons, one man should be able to stand off many times his number. Any opinions as to what actually happened is based upon imperfect information and must be subject to modification hereafter, but so far as may be gathered from the published reports the Russian position was only fortified over a part of its front and was no stronger than its weakest point.

The grand tactical interest in the battle relates mainly to Kuroki's march to turn the Russian left. In a modern battle the object of every form of attack is usually a turning movement of some kind. If an enemy is strongly intrenched the first effort is to turn his flank. If, however, his line is too much extended, in order to avoid this danger or to turn our own position, an attack on the center is worth a great effort, because, if successful, it will be equivalent to turning two of his flanks. Kuroki's extended march left a gap of ten miles in the center of the Japanese position, but this gap was protected by an unfordable river. If Kuropatkin could have surrounded Kuroki while slowly retiring from Oku, he could perhaps have annihilated one after the other. But when the left flank of the Russian right was turned it fell back so rapidly, either by design or from necessity, that Kuropatkin did not catch Kuroki. Orloff had been ordered to hold the range of hills from Hei-ying-tai to the Yen-tai mines, but failed to do so. Kuroki carried the position on the 2d and Orloff's forces were dispersed. Kuropatkin brought up all available forces to regain the hills, but too late, and Oku pressed harder on Kuropatkin than Kuropatkin pressed on Kuroki. If Orloff had held the hills, Kuropatkin could, perhaps, have driven Kuroki into the river. As Kuroki held the hills, Kuropatkin, right or wrong, thought he could not surround him.

The grand tactical advantage was on the side of the Russians, but the agility was on that of the Japanese. Kuropatkin did not destroy Kuroki, but he effected a masterly retreat, which was advantageous to the Russians. In a modern battle a frontal attack is dangerous; a flank attack is advantageous. If a position has no flanks, it can be surrounded and invested; if it has flanks they can be turned. If the defense is more active than the attack it can surround the surrounders.

Upon the whole, the advantage of initiative enjoyed by the attack may overbalance the advantage which passive re-

distance gives to the defense. It is not, however, as easy now as it was in 1796 and 1814 for a small force with interior lines to strike right and left and annihilate the enemy's detachments in succession.

[TO BE CONTINUED.]







ARTILLERY OFFICER.

TYPES AND TRADITIONS OF THE OLD ARMY.

III. MEMORIES OF THE FIFTIES.

By BRIGADIER-GENERAL MICHAEL R. MORGAN, U. S. A. (RETIRED),

LATE COMMISSARY GENERAL.

IT affords me pleasure to dwell upon my early life in the army and to think of those of my acquaintance of whom the army was composed at that time. I have no unpleasant recollection of the time, all were kind to me and I hope I was equally so to them. We rarely regret having done too much for others, but are often sorry for not having done more.

I always loved the army. My first station on entering service (1854) was the Presidio of San Francisco. I traveled across the Isthmus of Panama; all the way in the rain, part of the way on platform cars and the worst part on mule back. As I was getting on my mule an imperious fellow-passenger accosted me, saying: "Lieutenant, could you spare me a loan of sufficient to charter a mule to Panama?" I was not provided amply with funds, but I did not know how to decline. The passenger was a newspaper man. When I reached San Francisco he found me and paid me back part of the loan, and on the strength of this he said I ought to stand treat. I stood treat.

At the hotel, "The Oriental," I found some of my classmates who had just arrived by another steamer. They were Chapman,

Closson and Townsend, all "Seps." By the next steamer came Gordon, Gracie, Pegram and Greene, O. D., and perhaps Deshler. As was usual then, we all, second lieutenants or brevet second lieutenants, put up at the most expensive hotel. The rates were five or six dollars per day, but as the bookkeeper was an old schoolmate of ours, we paid only three dollars. I remained there for about two weeks as the date at which I was to report had not yet arrived.

Gordon and I had been assigned to the same company. I was glad to have a "sub" at the start and one so pleasant as dear old "Jake." His name was George Alexander, but I gave him the nickname of "Jake," by which he was lovingly known all his too short life.

One day at the Presidio in front of my quarters, rooms in the old Spanish adobe building, I being inside heard several of my visitors, Gracie, Pegram and Greene, with Gordon, crying out against the hardships of our service and the superior advantages of the British where commissions were bought and sold—they had not yet joined their first posts—one would sell out for \$30,000, another for \$20,000, another for \$10,000. I was indignant, and rushing out among them I told them I would not sell out for \$40,000—I would not sell out for anything—I was satisfied. And so I have been all my life.

In a day or two these gentlemen left for their posts, Gordon was taken from me and sent to San Diego to Burton's company, and on the increase of the army the next spring was transferred to the dragoons. Shortly after the departure of Gordon, our assistant surgeon, Hammond, was ordered away, and his successor, Laub, having stationed himself in the city, there were left but two officers, myself and my captain, who was a most kindly gentleman. He required nothing of me except to attend Sunday morning inspection and to be officer of the day every alternate day. I do not think he remembered when it was his turn or my turn to be officer of the day. As I was adjutant I kept the run of our tours of duty, and on my day never went off the post except to run over to Fort Point where engineer officers were blasting out a foundation preparatory to building what is now known as Fort Winfield Scott. As soon as I was seen approaching over the sand-hills, there was a cry to the little servant, a boy from India, whom they called Abdel Kader, "Abdel, mix a six-mule toddy for Sir John." We all had distinguished titles; I being the youngest was only a baronet. We had the Earl of Alcatraz, the Marquis of Lime Point, etc. I would invariably answer, "No, Abdel, a four-mule is strong enough." I did all the drilling of artillery, infantry and target shooting. My captain told me that he believed in the English plan, having all the drilling done by the sergeants, but he never interfered with me any more than I have hereinbefore indicated. He let me even select the non-commissioned officers.

The headquarters of the regiment, as well as of the department, were at Benicia, and there was no interference with the captain in the exercise of his duties. He wrote a letter, appointing non-commissioned officers, which was approved by the regimental commander.

The Presidio was the only military post in the harbor of San Francisco at that time. The department commander was a brevet major-general and assigned on his brevet rank. We were more economical of rank than of pay. We had then but one major-general (Scott), and two brigadier-generals (Wool and Twiggs) and the quartermaster-general. Soon after one brigadier was added (Persifor F. Smith), but both Wool and Twiggs, and I believe, Smith, were assigned to duty as brevet major-generals, with rank and pay. Gen. James Shields claimed that the vacancy to which P. F. Smith was appointed was created for him.

One day, when it was my day off, the general commanding, with some friends, arrived at the Presidio to hold an inspection and found no officer present. He was disappointed, and when I met him in the city a few days later he stopped me and whispered to me that if he ever came to the post again and found no officer present he would have to issue a positive order requiring one officer to be present all the time. The general came again, having been invited, with several others, to what my good captain called a *Dejeuner à la Fourchette*. I put the company through an artillery drill. We had four six-pounder brass pieces. The grass on the parade was very high, and when I put the men through dismounting and mounting the pieces some of the linchpins and washers got lost in the grass, whereupon the department commander helped us look for them. I gave the general a salute on his arrival. So far as I was concerned he was out there on that distant coast "The Major-General commanding." I would not give him short measure, and so gave him fifteen guns. We had so few generals at that time that we could afford to be generous. We had plenty of old powder.

A lieutenant of infantry who had been stopping for some time at the post was going home on leave. I promised him a salute, and as his ship was passing the Presidio I let him have it—eleven guns—no one found fault.

On Sunday mornings we had a review, I commanding the troops while the captain received the review.

On the whole these were pleasant times. I was as conceited as most young second lieutenants, and my captain as kind, gentle and indulgent as a captain could be. He saw my presumption of knowledge and ability, but only said, "When you get older you will know better." I hope I did learn better; at any rate I learned to appreciate the kindness and indulgence shown me on my entrance

into a service whose officers were unsurpassed by those of any service for integrity, ability and gallantry.

Before reaching this point I had learned how to draw my monthly pay, and to see that it was very small. It was consoling to know that others had lived on it and remained in the service. When I entered the service my pay was \$64.50 per month. Within two months thereafter, because of the pay of the soldier having been increased four dollars per month, the pay of a second lieutenant of infantry or foot artillery was raised to \$68.50 per month. To make out his pay account a young officer was required to have some skill as a clerk, as well as being an arithmetician. He must enter on his monthly account his pay proper, \$25, four rations per day at 20 cents each, \$24; for his servant the pay of a private soldier, \$11 per month; a soldier's clothing, \$2.50, and a soldier's ration at 20 cents, \$6 per month, making the allowance for a servant \$19.50, and making in all \$25 plus \$24, plus \$19.50, \$68.50 per month. On this princely (?) pay the second lieutenant was to eat, drink, clothe himself in broad-cloth (see order of Secretary of War, Honorable Jefferson Davis) and practice hospitality. In addition to this he was allowed fuel in kind and one room to live in and a kitchen. This was everything the officer received until after he had served five years, when his allowance was increased by one ration per day. Each officer received an additional ration for every five years' service. The commanding officer of a post drew double rations, the rations belonging to his grade. A lieutenant, captain or major drew four rations as such. If he commanded "a double-ration post" he drew eight rations. A lieutenant-colonel drew five rations and a colonel six. These rations were doubled when the officer commanded a double-ration post. The "double-ration posts" were announced in orders from the War Department from time to time.

Others than he who drew the double rations considered that this allowance was intended to cover the expense of entertaining. Of course the commanding officer did entertain, but the expense of entertaining strangers was generally defrayed by the bachelors' mess.

It happened, however, at times that an officer, passing through a post on the frontier to a new station with his wife and children, would drive up, bag and baggage, to the quarters of the commanding officer expecting to be hospitably entertained there. As a rule, he was not disappointed. The old army had very little pay, the officers were generally poor but hospitable.

I have, however, known of an instance where a colonel drew up with his baggage, at a post, to the quarters of the department commander, expecting to be entertained there. A little later he was informed that his baggage had been moved to the quarters of an aid-de-camp.

There was no retired list, and an old colonel might receive, and

there were instances where a colonel of fifty-five years' service did receive, as many as eleven fogy rations, amounting to \$2.20 per day. But old colonels were few and there were no young ones. The fogy rations were not doubled.

Although pay was very small, spirits, not *spiritus frumenti*, were high, and hospitality in a simple way flourished everywhere in the army. Especially was this the case among the younger officers who had nothing to save and did not save what they had.

At the Presidio we had a splendid company or post garden which produced all the vegetables we used and of a good quality, so that on drawing my pay I put aside only \$35 for my mess bill. We had a good cook in the person of an old soldier belonging to the company. For my laundress I set aside \$6 per month, and for my striker \$10; what became of the balance of my pay I cannot now recall.

The blank on which I drew my pay required that I should describe my servant. His name, height, complexion, his eyes and the color of hair. I wrote it "John, negro, black hair and eyes and about 5 feet 6 inches high." There was no darky in California who held himself so cheaply as to serve me alone at a soldier's pay and allowances.

On receiving my appointment I laid in a supply of clothing for which my father paid. I did not think of ever requiring any more.

The engineer officers who were building Fort Point were better off than I was. They drew commutation of quarters at the rate of \$20 per room, and lived in their offices, the senior officer building a house for himself and family on the reservation. But they had better pay than I had, and one of them, about my own age, would come along on his pony on his way to the city, and calling out from the hill above the adobe quarters in which I lived, "Hello, Sir John, let us go to town." I would sometimes reply, "No, I cannot go I have no money." He would almost invariably answer, "Never mind, I have sufficient for both. Saddle old Tom"—a badly used up government horse—"and let us go." We would go probably, and while I paid all necessary personal expenses, such as for stabling "Old Tom," my engineer friend would provide theater or opera tickets for ourselves and for the young ladies whom he invited. We hired no carriages, nor did we have a supper after the opera. No, indeed, no foolishness of that sort. Dear old Alex! he was a lovely man. He died two or three years later of yellow fever on Ship Island, Louisiana.

There was a most agreeable young gentleman, a son of an army officer, who was permitted to occupy quarters at the post. He was employed in the city during the day, but I had the advantage of his companionship in the evening, without which I would have found service at the Presidio very dull. In addition I frequently met some of the officers of the engineer corps stationed in or near the city.

Some of those were De Russy, Tower, Whiting, Trowbridge, Prime, N. F. Alexander, Lee and Elliot. I was the only lieutenant of the line of the army in the harbor. My captain, although very good and considerate, was, after Martin Burke, the senior captain of the regiment, and indeed I saw very little of him, as he was in the city every day and all day attending to his affairs. I am under such obligation to him that I must make record of the occasion of it.

Our dining-room was next the captain's bedroom where he could hear the least noise made in the former room. One morning he asked me what was the noise he heard some evenings in the dining-room. I asked him the nature of the noise; he said the clinking of glasses. "Oh," said I, "you hear me!" "What are you doing?" "I'm mixing a toddy," replied I. The four-mule toddies at Fort Point had become agreeable, and being so alone I sometimes mixed a toddy and drank it for company. He replied to my answer: "Stop it, young man, stop it; never drink alone, if you *get* into such a habit, by and by you will be unable to stop it." I did stop it right then and there. He told me afterward that I was a reliable officer, that I was always present at Sunday morning inspection. That was the one important duty that he wished done well.

The post surgeon had remained in the city when ordered to the post, coming out twice a week to attend to what he looked upon as necessary duties. This, of course, was with the consent of the post commander; but while the latter was away on some detached service, and I left in command, instructions came to the post commander from department headquarters to direct the surgeon to take up his quarters at the post. This the doctor did not like, while it was very agreeable to me, as it promised me more society. One morning while the doctor was making his biweekly visit and calling on me I wrote out the order and handed it to him in accordance with received instructions. He coaxed and protested; I should not do it, he said; that I was only in command by accident and that a second lieutenant should not exercise such authority while in temporary command. It was the first written order I ever gave, and as I left the post soon afterward was not complied with when I left.

About this time, and in the absence of the captain, there was an officer on leave from an interior post who had incurred the just displeasure of the department commander. He was stopping at a hotel in the city. The post commander was instructed to take the officer to the Presidio and keep him there. The officer was my senior, but I hunted him up and making known to him the order of the commanding general, told him I would expect him at the post the next day. He demurred on the ground that I was his junior; but the order was not mine, I was only executing the order of our common superior. He came. I had him put to bed and he was in fact my prisoner. As I did not know how to treat a case

like his I was very glad when after a few days his post commander, Lieut.-Col. Benjamin L. Beall, First Dragoons, came along and by authority of the commanding general took him back to his post.

There were two light or mounted batteries in each of the four regiments of artillery. These batteries had permanent captains, but the three lieutenants serving with each of them were detailed for two years for the purpose of instruction. I was detailed to serve with Light Company "E" of my regiment, the service to commence at Fort Snelling, Minnesota, October 1st. I had ample time given me in which to reach my post. The order was received probably about the end of June, but I might not leave my station until I was relieved by the department commander.

The captain being away on detached service there was no officer to relieve me. Lieut. John Pegram came along late in July on his way east from Fort Tejon to join the Second Dragoons and insisted that I must go with him on the steamer leaving San Francisco, August 5th. Pegram went up to Benicia and had an officer, Tyler, ordered to relieve me at once. I got ready in a hurry. There was no paymaster present in San Francisco at the time, and although my pay was small it was desirable to have it. What should I do to get my pay for July? There was in San Francisco a banker named Capt. William Tecumseh Sherman. He had resigned from the army and was conducting an agency for a St. Louis banking-house. I took my pay accounts to him, and he cashed them for me. Lieutenant Pegram and I sailed for Panama. After a delightful trip down the coast we reached the isthmus and crossed over by the Panama Railroad to Aspinwall, now called "Colon." Here taking ship for New York we reached that city in about twenty-five days from San Francisco without incident worthy of note. Here we put up at a hotel much frequented by army officers, the name of which I do not now recall. After a day or two Pegram kept on to his post, I suppose, by way of his home. On Saturday afternoon I called at General Scott's headquarters, a small house, and found no one present but a woman who was sweeping and dusting the rooms. I registered, stating at what hotel I was stopping and that I would be there until Monday morning. On Monday I took up my residence with some relatives in the city, remaining with them for two or three weeks. Pegram and I had paid a visit to West Point where we were treated with the usual hospitality at the hotel.

Having visited in New York as long as I cared to remain—I had drawn my mileage from San Francisco and so had plenty of money. They paid us ten cents per mile. I believe I received about six hundred dollars in gold, which I found very inconvenient to carry, and now I started finally for Fort Snelling and Light Company "E." I found that two orders had been issued in my case from General Scott's headquarters. I wanted but one order, that sending me to Snelling,

which I had in my pocket. The other sending me to Fort Washita, Indian Territory, had been issued later, but I never saw it.

I stopped en route at Niagara Falls. I was very proud of having been to California and believed I knew all that was worth knowing. No one could take advantage of me. I learned differently at Niagara Falls, for a hackman then did take one in as he or other hackmen had frequently taken other strangers in at the same place. There is no use in dwelling on an unpleasant episode of fifty years ago; every man of my age remembers plenty of them.

The trip from New York to St. Paul was a long and tedious one in 1855. Arriving at Dunkirk, opposite Dubuque, I put up at the hotel and waited for the boat to take me up the Mississippi River.



OLD FORT SNELLING—FROM A DRAWING BY CUTLER.

With a great many other travelers I embarked on the good steamboat *War Eagle* about the 20th of September, 1855, for St. Paul. Among the passengers on board was Captain McDowell, U. S. A.; Asst. Adj.-Gen.

Being young I found the fare, in quality, satisfactory, but as I would not contend for a seat at the first table I found myself very often reduced to the second, and sometimes to the third table. However, in due time we arrived in St. Paul, at that time a very small city and capital of the territory of Minnesota. At the Winslow House, the principal hotel of the city, I found some army officers, and among them a Lieutenant of Light Company "E," who considerably gave

me a seat in his wagon, and having arranged for the transportation of my baggage I accompanied him to Fort Snelling, which I found to be about six miles distant from St. Paul. Fort Snelling was the first so-called fort I ever saw. It was originally called Fort St. Anthony—established in 1820 and first occupied by troops two years later. The name was changed to Fort Snelling in 1824. Situated on the bluff formed by the junction of the valleys of the Minnesota, or St. Peter River, and the Mississippi, and a hundred feet above the water. An enclosed fort of the shape of an irregular pentagon with four towers connected by walls, and storehouses. The stables, workshops, etc., were on the outside of the walls. It commanded the country in the immediate vicinity, so far as was necessary for the purpose for which it was established, viz.: as a defense against hostile Indians.

The walls inclosed an area of about twenty-five acres, over which I have often been drilled on foot through the fresh fallen snow on Sundays when the fall of snow was too heavy for battery drill on the plain. How we have been trotted around "all agog" between inspection and church time!

The garrison at the time of my arrival consisted of Light Company "E," Third Artillery, with its four officers, together with a paymaster, medical officer and chaplain. It was unusual to have a paymaster stationed at a military post except on the frontier and then only for convenience. He had nothing to do with the troops except to pay them off once in two or four months, and even, at times, once in six months. The troops were mustered for payment every two months. Quarters were scarce, and only those whose presence with the troops was necessary should be at the post. The paymaster, not doing military duty, seemed irresponsible and did about as he pleased. He allowed himself much latitude in dress, appearing in civilian dress, except at the pay table, when he appeared in uniform, or nearly so.

The position of paymaster at the time was looked upon as the best promotion a captain of the line could expect, while that of commissary of subsistence was the best thing open to a lieutenant. The two positions were eagerly sought for. Albert Sidney Johnston and James Longstreet were paymasters, and William Tecumseh Sherman was a commissary of subsistence. Old officers, even in the present day, sometimes grumble and growl and find fault, and anent this trait sometimes observed in old soldiers there was a story current in my youth to the effect that an old captain, who had contracted the grumbling habit alluded to above, was asked what he would be willing to take and stop grumbling. After long consideration he said "Well, if I was appointed a paymaster I would stop"; then on further reflection he exclaimed: "No, I would not give up my right to grumble for anything!"

A paymaster had the rank and pay of major and usually lived

in a city where, if he had the means, he could rent a house that would be more satisfactory than the quarters to which an officer of his rank would be assigned at a military post.

Fifty years ago officers and men were most miserably housed. A captain of twenty-five or thirty years' service, with half a dozen children, in two rooms and a kitchen, if the size of the garrison permitted such an allowance! The enlisted men packed in quarters where there were two in a bunk, and at times the bunks tiered three bunks high and infested with vermin! These things at present are vastly better for the troops, officers and men. For officers stationed in cities the allowances for quarters and fuel are not so good as they were fifty years ago.

I was not expected at Fort Snelling, and when I reported with my order in my pocket to the commanding officer he told me so. Capt. Irvin McDowell, one of General Scott's staff, was present and he said he did not remember seeing any order detailing me for duty with Light Company "E." I drew forth my order and that settled it. They were expecting me at Fort Washita with Bragg's Light Company "C," and plans were formed there in which I was to perform an important part. I have always been glad that I never went there. The order sending me to Fort Snelling was confirmed and I remained there until, by the death of General Bankhead, I was promoted to a first lieutenancy.

In the fall of 1855 a portion of the Tenth Infantry, recently organized, moved up from Fort Crawford (Prairie du Chien, Wisconsin) to Fort Snelling by boat. When the news of the near approach of the infantry was received—we had no telegraph, no telephone, no railroad, no nothing at that time—the senior lieutenant of artillery present, a hospitable man and a bachelor, ordered supplies with which to make glad the hearts of the coming officers, saying to me, "I will show those dough-boys what artillery hospitality is." He stood all the expense unaided. He ordered five gallons of whisky from the commissary, a brand new water bucket and tin cup from the post sutler. The bucket he filled with fresh water from a barrel behind his quarters, and this with the tin cup he placed inside his door near the demijohn of whisky. The whisky cost nineteen cents a gallon. I was no judge of whisky at that time, but I believe it was good.

This was one thing in which the old army had the advantage of the present. The *spiritus frumenti* of half a century ago was good and cheap, and the advantage was duly appreciated. They did not take the trouble to decant it into bottles, it was left in the demijohn until wanted for use; then tipping it up gently on your right arm—I have seen it done—and giving the vessel a tilt, you poured all you wished into a tumbler, you had all you desired. As to using water with whisky, I remember one of the old Mounted Rifles who, when

asked if he wished water in his liquor, answered, "Do you take me for a camel?"

This was the way in the quarters of the bachelors. When the officer was married they did not use so large a measure. After being married I kept whisky and sherry on my sideboard and never even let an officer leave my house, unless he was the chaplain, without asking him to "Change his breath." We did not always drink when invited, and this reminds me how unpleasant the host sometimes made you feel when you declined his invitation. A drunken man or a drinking man always wants people to drink with him. This is the rule whether the man lives in the city or in the wilds. The cowboy on a spree will sometimes shoot if you refuse to drink with him. The habitual drinker, wherever he is, will be displeased under the same circumstances. Your refusal is a reflection upon his condition or habit. I was once sitting in an officer's quarters when another officer coming in was asked to take a drink. He accepted, and as he had the demijohn on his arm and about to tilt it asked me if I would not drink. I replied, "No, I thank you," whereupon the host broke out with, "No, damn him, he won't drink, and sits there watching us, expecting to gain promotion by our death." You had to be careful about refusing as well as in accepting such invitations.

I remember one officer who always kept the best whisky in his house and would insist just before luncheon on having all officers whom he saw go in to drink. He would stand on his porch with his dexter forefinger on the side of his nose, which all knew meant "Come in and partake." A failure to accept the invitation was a *casus belli*.

There was an old officer in command at a large frontier post who after office hours would place himself in front of his house and ask each officer coming by, one by one, to walk in and take a drink. When asked by a curious acquaintance why he pursued this course instead of asking all in at once, replied, "Because I want to get half of my own liquor." He too was opposed to drinking alone.

But to return to the hospitable artillerist, who has been left too long alone; when he had his preparations made he said "Now let the d——d doughboys come on." The boys came on. There is now only one of those good fellows living. Nelson, Gardner, Bee, Tracy, Dunovant, Marshall, Maynadier, Kelly, Swaine, Rossell, Hill, all gone home.

It may be interesting to know that at Fort Snelling all the water we used was hauled up the steep hill from the Minnesota River in barrels by ox-teams. The battery horses were ridden down to the river to be watered, the ice being broken for them in the winter.

I have often, going out to reveille roll-call in the winter, thrown a blanket around me and returned the polite salutation of the colonel commanding the post who was on hand outside of his quarters every

morning. There were giants in those days—Alexander, C. F. Smith, E. R. S. Canby, T. W. Sherman, Ayres, etc. Some had gained their laurels in Mexico, while others had added to their Mexican renown fresh distinction in our Civil War.

On my first day on duty I was directed to accompany the officer whom I was relieving in all his duties for that day. I did so, and at night I was told that the duty then completed would be required of me every third day. My captain, although a strict officer, never corrected me nor called my attention to any failure or slight of duty while I was with him.

The battery had four pieces, two sections. I being the third lieutenant in rank was chief of line of caissons. The battery was short of men and the commander required any men of his who might be in the guard-house to attend drills and stable duty. One cold evening I was on duty as orderly officer at the picket-rope, and an ugly fellow named Caldwell, a prisoner, having two horses to groom, told me that he would groom but one as he did not get his full ration. I didn't know what to do. He was a prisoner already, I couldn't make him more so, and I couldn't see how I could make him groom that other horse. Of course, he was taking advantage of the inexperience of the young lieutenant.

Along came "The Major" to see how the young sub. was getting along. He addressed me pleasantly as usual. "Well, young man, how are you getting on?" "Not very well, Major, Caldwell says he does not get his full ration and will groom but one horse." "Well," replies my captain, "what are you going to do about it?" "I don't know what to do, he is a prisoner now." "You have ordered him to groom two horses?" "Yes, sir." "Well, see that your order is carried out. Never give an improper order; let your orders be just and proper and then see that they are duly executed. When the horses have all been groomed except that one of Caldwell's have the first sergeant 'lead in,' tie Caldwell to the picket-rope by the side of the ungroomed horse and keep him there until he agrees to obey orders." I had this done, whereupon Caldwell said: "Well, Lieutenant, there is no use in waiting; I will groom the horse."

This was a lesson to me that I never forgot. It came in very pat two years afterward, when I was all alone on an Indian reservation with a detachment of men who had been "picked out" for me.

The major was a good battery commander. He saw that his command was well instructed and his horses, guns and harness in good working condition. He drilled regularly, not neglecting target-practice nor foot drill. It was something of a hardship for the lieutenants to be required to provide their own mounts for the short detail of not to exceed two years. I had my own horse, but the major did not require it.

The inspection on Sunday mornings was equal to a drill. We

would be marched out toward Minneapolis, which was then but a small village, and put through battery maneuvers about the same as on week-days. There was a story on this subject which the major liked to have told on him in after years, showing how contrary he was. I do not vouch for its authenticity.

The ladies of the garrison, it was said, did not want the battery taken out of their sight for Sunday morning inspection, and asked the senior lieutenant to request the major to have inspection and drill on Sundays take place under the walls of the fort where they could witness it. The senior lieutenant said there was no use in his asking, his request would not be granted; "Let ———, meaning the junior lieutenant, make the request, he is the major's pet." So the junior sub. told the major that the ladies of the garrison were indignant with him for not showing more respect for the Sabbath; that in their opinion there should be no drills on Sunday, but that they thought he, the major, seemed to delight in desecrating the Lord's day and without any respect for their feelings had Sunday inspection, with drill at times, under the walls of the fort. The major was mad, and declared he would drill his battery where he pleased, and that hereafter, weather permitting, he would have his Sunday and monthly inspections right under the walls of the fort.

After this the ladies had the Sunday inspections where they could enjoy seeing them, from the walls of the fort. The general used to say in after years, "I believe that story is true, it was so like me."

After the accession of the companies of the Tenth Infantry to the garrison at Fort Snelling, we "marched on" a large guard. The artillery detail, three men and a non-commissioned officer, marching on with the infantry, but doing duty only at the artillery stables—two men with the non-commissioned officer remaining at the guard-house, the one sentinel only being at the stables.

We had an officer of the guard as well as an officer of the day; the captains of the garrison doing duty as officers of the day, and the lieutenants as officers of the guard; the battery officers performing their quota of duty with the others.

There was always a good deal of drunkenness in the command just after pay day, not alone in the companies of the recently organized regiment, but in the veteran battery as well, and as our guard-house was a poor affair of insufficient capacity we had to employ auxiliary means for keeping the prisoners in good order. We had three or four cells leading off from one side of the guard-house, into which were put the worst cases. On the other side a ramshackle affair, which was so narrow that it allowed only room for the prisoners to lie down side by side, and when the number became too great or the men too noisy they were taken out and made to march around a ring until they became quieted down—or they were tied up in the cold as long as it was safe to leave them there, or until the gentle

colonel came along and saw them, when they were taken in. This was prison discipline.

Having the very bad prisoners parade during the night, whenever the relief was turned out, was pretty hard. Having a man sentenced to wear an iron collar on his neck with long spikes so arranged that he could lie with the spikes only in one position seemed to me then, and seems now, very severe. But they were very unruly men and of these the artillery furnished its quota. There may now be worse men and more severe punishments inflicted than I then knew of, but I hope not.

I have rarely seen an officer strike his men on drill with his sword, but I have seen it. Later I have myself been called to account for correcting a non-commissioned officer, by name, on drill.

One cold night as I sat quietly in the room of the officer of the guard, a lieutenant of artillery rushed in, his coat off and dress very much disordered, and reported that he had confined Caldwell of the battery, the same who did not want to groom a second horse, and that he was fighting drunk. I at once went into the guard-room where bedlam seemed to have broken loose; the prisoners were yelling like wild animals, the members of the guard nervous and moving about and not half trying to put Caldwell into a cell. I told them to pick him up and put him in. At this Caldwell broke from those who were holding him, and striking me on the head knocked my "tar-bucket" hat, the uniform hat of the time, out into the snow. I conscientiously whacked the fellow with the edge of my dull sword. A member of the guard jumped at me, taking hold of my shoulder, but catching him under the chin with the point of my saber he dropped me and apologized for his act. I got things quieted, putting Caldwell into a cell and the member of the guard placed in confinement.

Caldwell complained of me next day, but received no satisfaction. It was a little singular that no one would acknowledge that he saw Caldwell strike me, although a member of the guard went out, picked up my hat, and brought it to me. My other assailant was duly tried by court-martial in a very mild charge preferred by me, for the mildness of which he was duly grateful. While he was undergoing punishment in the guard-house, and I came on as an officer of the guard, Pike, that was his name, asked and was permitted to wait on me, making my fire and sweeping out my room. He turned out a good soldier in Utah.

To go back, as soon as matters became quiet in the guard-house the prisoners became quiet, but in order that they should remain so I tried to find out who were the leaders in the rumpus; but the worst man there whom I questioned said he did not know, and indeed if he had told on anyone but himself it would be no pleasant resting place for him. The prisoners were packed in as closely as sardines in a box, so I told them that if there were any further noise I would flood their

place of abode, and the water was very cold. We had no more trouble that night. The threat of resorting to that kind of "water cure" in that day, and in winter at Fort Snelling, had a sedative effect.

The prisoners, I believe, tried each officer of the guard one after the other that winter.

After this, one night when the major was officer of the day, and a deaf lieutenant, who wore spectacles, was officer of the guard, the prisoners broke out, the guard were driven from the guard-house by the prisoners who seized the muskets and musketoons, fortunately unloaded, and took command. The long roll was sounded, the companies formed, but the officers led by the officer of the day went to the guard-house in a body, and after running the gauntlet of a shower of small arms and of balls attached to men's legs by chains, the prisoners were got under control. The officer of the guard just missed a ball thrown at his head by one of The Major's bad boys. Hitherto, sentences of ball and chain had allowed a length of six to eight feet to the chain; after this three feet was the extreme length allowed.

The man who nearly brained the officer of the guard with the ball attached to his leg by a too long chain was tried by court-martial and sentenced to wear a spiked iron collar for six months.

Having five companies of infantry and one light battery of artillery, and the headquarters of the Tenth Infantry, with full complement of officers, we were pretty closely packed inside the walls of the fort. Twelve of the officers at the post had their families with them. Two married lieutenants were sent to the hotel on the plain, near the Springs and Minnehaha Falls. We were so pushed for quarters that two lieutenants turned out the ordnance sergeant from the upper room of his quarters, he and his wife retiring to the basement. The lieutenants occupied the vacated room all winter. The little room was a place of assembly in the evening for those interested in "a little quiet game." My rank was not sufficient to entitle me to any quarters that I would accept of, for if I could avoid it I would not displace a non-commissioned officer and his wife. I had been "turned out" by two captains. The senior lieutenant at the post let me have his front room for my use. Indeed it was the only room in his quarters. It was small and back of it was what would now be called a cupboard opening into my room, which was the only means of access to it, in which he slept. My room, one-third filled with my big bed, which, with a lounge, I had bought from my predecessor, and both were of a rather rickety nature, was our only sitting room, and indeed the place of assembly for the officers of the post. My infirm lounge was found useful on occasion. We had a large box-stove and beside it a box of sawed wood.

We had a basement under this room and the cupboard, in which

was our dining-room, kitchen and servants' room—our dining-room was the officers' mess room.

Not being of a highly hilarious nature, I went to bed in good time and did not before—"retiring" it is called in good society, but there was no retirement in the room—going to bed indulge too freely in the contents of that same old demijohn which was never empty—I fell asleep, but was seldom permitted to do so undisturbed. The little adjutant took much pleasure in dancing on my invalid bed and filling me with alarm lest it should fall to pieces.

When my senior wished to retire, he placed his hospitality outside his door, which he then locked and left the company to enjoy themselves in the usual way. Before going home they would fill the stove with wood and going out, carefully shut the door. Toward morning I would wake up because of the intolerable heat of the room. I lived through the winter with but one severe cold.

The quarters of each officer were so cramped that we could not object to those who had families spending a large portion of their evenings in the quarters of those who were so unfortunate as to be unmarried. However, the young men enjoyed life at Fort Snelling that winter. We hadn't much and there was not much expected. I was invited to little evening parties and to dinners. I, with others, visited around in the evenings and played some round games at cards and ate apples and nuts. In case we did not wish to spend the evening, we excused ourselves on the plea that we must go out and attend tattoo roll-call.

I remember attending a card party—it was a stag party—which I greatly enjoyed. The refreshments were simple and inexpensive. They consisted of cold fresh beef, properly cooked, roasted not too rare, an excellent quality of bread and butter, whisky and water, with pipes and tobacco. Everything in abundance. We did not play for money. I preferred those refreshments to cucumber sandwiches or a little weak lemonade, as might be offered at the present day.

In the winter "the major" let us have a team of four battery horses—to exercise them—with a driver that he could trust; the quartermaster gave us a wagon-body filled with hay, on runners, buffalo robes, blankets, etc.; we did the rest. The sleigh was soon filled with young people, and off we went on the frozen Mississippi to St. Paul. We enjoyed all there was, whether a dance or a —— *conversazione*. I will confess that the dance was the more popular amusement.

While I was at Fort Snelling there was assembled there, what was very rare in the army at that time, a general court-martial, for the trial of a commissioned officer. Among the officers present were Colonel Abercrombie, Major W. T. Sherman, with Capts. Irvin McDowell, Fred Steele and Alfred Sully. All general officers in the war that raged between the States a few years later.

Sully was something of a wag, and one day as the only carriage at the post was being driven past the post headquarters, where Sully and a number of others were standing, called out to the driver, the owner of the outfit, an old officer, a paymaster, who was very independent and not particular about the appearance of his civilian dress, and whose apparel, though it might be comparatively new, never presented anything like a fresh or brand-new appearance, "Hello, Y——, where did you get that hat?" Major Y—— instinctively pulled up, took off his soft hat to see what was the matter, and looking at it critically, answered, "Why, it's the same old hat." The officers all laughed and Sully said, "I thought so." Major Y——, seeing the laugh was on him, shook the reins saying, "Get up!" and not having on hand any language such as might be used with propriety in polite society, used such as he was most accustomed to use on extraordinary occasions. He had been captain of a light battery of artillery, and I think a captain of a light battery has more occasion for the use of a variety of language than has a commander of a cavalry troop. We have all heard of the much-criticized language of the army in Flanders, and I'm sure it will be conceded that to adequately command horse and man a more varied vocabulary is required than to command man without the horse.

Before the Civil War and long after the close of that dreadful conflict paymasters were not required to take station at posts—indeed, they were as detached from military posts as were some department commanders three-quarters of a century ago, and later when General Brown commanding the army lived on a farm near Sackett's Harbor, and later still when General Wool lived in Troy, N. Y.

Ah, those were glorious times! The War of 1812-15 was over, and we would never have another war. Someone since that time has said, "How pleasant the army would be were it not for the soldiers."

* * * * *

I had just arrived in Kansas and was stopping in the city of Leavenworth waiting for my quarters at the fort to be vacated, when I again met the paymaster to whom I have hereinbefore referred and of whom I would not write were it not that he enjoyed telling stories on himself. He rode up from his home every day to his office at the fort in a shabby, ragged and ramshackle vehicle, an old ambulance with torn curtains flying in the wind, and drawn by a pair of horses to match. His own dress was in keeping with this outfit, of which he seemed unduly proud. He kindly called for me two or three times to take me to the fort, but as he got through his work at his office earlier than I did, I found it convenient to get a conveyance for my exclusive use to take me to and fro. This he laughingly ascribed to pride on my part, not wishing to be seen in his carriage, and then told me the following story apropos of this:

"One morning as I arrived at the fort and was hitching my horses to the hitching-bar near my office, a poor, sickly-looking darky came up and looking at me and my outfit, accosted me, saying, 'Are you the man that takes colored gentlemen to the smallpox hospital?' I told him in as appropriate language as the circumstances seemed to demand that I was not that man."

This was the same officer who when in camp in Utah refused in unmistakable language the compliment of being crowned "Queen of the May" when a frivolous young officer tried to insist on conferring upon him that honor (?).

I now bid good-by to Major Y——, who was as warm-hearted, generous and hospitable a man as ever I was acquainted with, but one who could never get "on the colors" if he ran for them all summer.

His bones are dust: his sword is rust,
His soul is with the saints, we trust.

We had a wedding at Fort Snelling toward the close of winter, which, added to the departure of an officer, a lieutenant, my senior, "on leave of absence," caused a movement in quarters. The newly married, or to-be-married captain, took the vacated quarters—in fact, exchanged quarters with the departing lieutenant.

I was so uncomfortable in my restricted quarters that I made application for the lieutenant's quarters on the ground that I had had no quarters, no quarters had been assigned me, and it was now my turn to select. The commanding officer decided against me. I appealed to department headquarters at Fort Leavenworth. The appeal was not heard from until summer, when, because of the departure of troops from the post, I had all the quarters I could desire.

"Time cures all things."

The appeal was then decided against me, and justly.

While on the subject of quarters I will mention a Fort Snelling incident. A regular quartermaster, a captain and brevet major, a one-armed veteran of the Mexican War, was assigned to duty at our post in the spring of '56. He did not take quarters, but went to work to prepare quarters for himself and family outside the fort. There were out there two old tumble-down houses, six or eight hundred yards from the fort, one or both of which had been used by the beef contractor. There was money available for repairs, but none to be used in building quarters. You might repair a wagon if you had only a wheel to begin on, but you might not build a wagon out of funds for "repairs." The quartermaster now went to work to repair one of these houses into habitable quarters. When toward the close of summer he got the house completed a staff-officer, his senior, who occupied quarters in the fort, asked the commanding of-

ficer if the newly rejuvenated quarters were assignable, and being answered in the affirmative, applied for and was assigned to them. The quartermaster then went to work to fit up the other old house for his use. Whether anyone took this house from him when completed I do not know, as it was not finished when I left the post. The officer was as quiet and as industrious as the spider, which when its web is broken renews its labors and mends the breach; but which one of the two officers was the real spider I leave the reader to judge.

In the spring Brevet Col. C. F. Smith and Brevet Lieut.-Col. E. R. S. Canby came up from Fort Crawford with the companies that had wintered there. Some of these, with others from Fort Snelling went under Colonel Alexander to Fort Ridgely, while others went under Col. C. F. Smith on the expedition to the Red River of the North (Pembina); some went to Fort Ripley and one remained with Colonel Canby at Fort Snelling. This last company (Tracy's) with Light Company "E" Third Artillery constituted the garrison for the summer and ensuing fall. We were very short of officers that summer. There was no lieutenant of infantry present, and because of the illness of the captain I found myself off and on in command of that infantry company. When Colonel Canby took command of the post, he, sitting on the steps of one of the sets of quarters whittling a pine stick and with an unlighted cigar in his mouth, addressed me as I was walking past him: "Mr. ———, I'm going to take command of this post, and I would like you to assist me as adjutant." I felt pleased and complimented at the order and at its wording and the manner in which it was given. That summer of 1856 was quiet and uneventful. In the fall the major, who preferred to command rather than to be commanded, went off "on leave," the battery being under the command of Lieut. R. B. Ayres. In September Captain Heth, with Lieutenants Dudley and Deshler, came in with his company mounted on Indian ponies from an expedition that had been out on the plains under General Harney. The ponies were sold and Heth went away on leave.

As the first snow was falling, the expedition to the Red River of the North under Colonel Smith returned and settled down for the winter.

Colonel Smith assumed command of the post and Brevet Lieutenant-Colonel Canby went away on leave.

At that time officers went away on leave of absence with full pay. I am of the opinion that the law in the case should now be the same, and allowing, as at present, to each officer a month's leave for each year. This might be allowed to accumulate for six years.

In November I was promoted first lieutenant, and on receipt of the notice of my promotion in December, Colonel Smith relieved me from duty at the post and I proceeded to join my new company at Fort Miller, in southern California, on the San Joaquin River.

I liked my first promotion very much, but would have preferred to remain at Fort Snelling until the spring, and thus avoided the very disagreeable trip through the snow-covered country from St. Paul to Dubuque, the then terminus of the Illinois Central Railroad.

My memories of Fort Snelling are mostly pleasant, and before I leave that then frontier post to take station at a one-company post in the interior of southern California, another frontier post, I would relate an occurrence in connection with Col. C. F. Smith's arrival at Fort Snelling with his command from Fort Crawford, Wis., and while encamped on the plain preparing for his expedition to the North. At the time of which I write there was the greatest formality between the captain and his lieutenants. We looked upon a captain as an officer of considerable rank—, a rank to which we might hope to attain in eighteen or twenty years. I remember Colonel Canby telling me of being a second lieutenant for seven years, and I recall that Lieut. Nat. Michler was a brevet second lieutenant for six years. The engineers and ordnance officers had a law enacted by which they became captains in fourteen years.

Well, eighteen years seemed a long time to a young lieutenant, and to see ourselves captain seemed about as far as we could see. I remember the visit in 1856, at Snelling, of a captain of my regiment; he was on sick leave, seemed to have consumption, and I supposed would not live much longer. Promotion was very slow and we counted upon him for a file. But

Hope tells a flattering tale,
Delusive, vain and hollow.

In 1866 I was a major in the staff and he applied to me for a transfer. We could each take the other's place.

But to go back, a lieutenant never addressed his captain without prefixing his title, and the captain reciprocated by mistering his subalterns. There was the greatest deference shown to rank.

Colonel Smith was a distinguished soldier, having received three brevets in Mexico for gallantry in battle, and died as a major-general of volunteers.

I'm coming to it. All of us officers paid our respects to Colonel Smith in his camp, and he in return called on each and everyone of us in our quarters. How it would be now under like circumstances I leave those who have had experience to tell.

P. S.—It has been suggested by "My Publisher" that my "Memories" end "rather abruptly." I would ask if everything pertaining to the military does not end abruptly.

I know of nothing much more abrupt than "cease firing." When an officer reaches the age of sixty-four years he is abruptly placed on the "retired list." I could multiply instances of abruptness in military life.



TRAINING SOLDIERS IN PERSONAL HYGIENE.

LIEUT.-COL. H. K. ALLPORT, R.A.M.C., writing in the *Journal* of the Royal Army Medical Corps, states that this is almost a new idea, but more probably an old one revived or intensified. Formerly it was not possible; now we live in more sanitary times, and the only barrier to the attainment of the idea is the ignorance of the soldier. The *esprit de corps* story is not yet old, and is still applicable to men in the ranks at the present time. The soldier has never been taught the practical art of healthy living, indeed Colonel Allport does not know of any class to whom it is systematically taught; it is an art neglected in civil life as well as in the army. But the young soldier, of all men, requires such instruction; he has been placed without preparation in new surroundings, the purpose of his life has been changed, he is expected to become a healthy animal, fit in every way for the strain of war or foreign service. He may, and indeed must, learn something of personal hygiene, but there is no system, no teaching, and there is nobody responsible. He is encouraged to learn everything else needful for his profession, but in this matter the recruit is supposed to be inspired. Colonel Allport's experience shows that the recruit does not know the simplest things, such as how to wash, how to care for his teeth, or his feet; how to look after his underclothing, how to eat or drink, how to avoid cold or heat, how to preserve his health and fitness under varying and unusual conditions. The young soldier is in these matters a grown up baby whose education stopped at the age of three, when he was left to look after himself. If the soldier can be successfully trained in these matters the result will be of immense value to the State, as well as to the man himself. Colonel Allport is impressed with the necessity of training the recruit in this art, and making it a part of the routine through which he must pass. It is futile to condemn the men for their apathy and their ignorance of simple sanitary laws—they know nothing about it.

An officer of a distinguished regiment once said to Colonel Allport:

" 'tis no use, you can't clean them, 'tis their nature to be dirty, they like it. This would be a nice regiment without the men, just the band and the mess." Colonel Allport admits they were difficult, but that was in the old days. Still, however, he continues, it is hard to influence the men in a regiment; they are set; whatever may be the habits and traditions of the men, they are almost unchangeable. To be quite successful this training should be commenced in the depot and carried on in the regiment. Who will carry out this work? What branch of the army will undertake it? There are no arrangements at present in force. Colonel Allport thinks there can be only one answer. The officers of the Royal Army Medical Corps have the necessary training; it is their interest; it will further their work; they ought to undertake it. The sympathy of the regimental officers should be aroused, and the co-operation of the non-commissioned officers is essential, as they are in constant touch with the men, and can get them to do things that no amount of talking will accomplish.

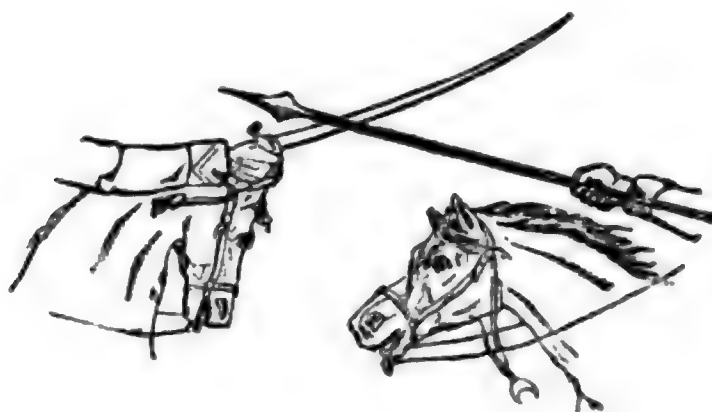
Colonel Allport in his paper sketches very briefly his experience among the recruits of the Royal West Kent Regiment at Maidstone. Here he found the plastic material he desired. Colonel Brock, commanding the troops, entered fully into the plan. The men were assembled in the gymnasium once or twice a week, and Colonel Allport talked to them. Practical illustrations were given when possible, and a blackboard was useful. They formed a very interested and attentive audience, and Colonel Allport learns that his lectures form texts for barrack-room conversations. The subjects and the language were simple; just their daily life and habits, about fresh air, sunlight, food and drink, their clothes, their rooms, the care of their teeth, cleanliness. Many converts were made, and a new feeling is growing. The work is also carried on at weekly inspections; this is very important, and a most practical way of impressing and teaching the men. The idea is kept before their minds on every suitable occasion, in the gymnasium, at vaccination, at hospital. The regimental officers give their support, and the non-commissioned officers assist, they come into direct touch with the men in their rooms and daily life. The gymnasium instructors especially have a very powerful influence, which they employ for good. For the short time that this work has been carried on the results appear most favorable, and encourage a feeling of great hopefulness. The recruits begin to understand and take a pride in following rules intelligently. Colonel Allport states that he is gratified by the ready, "Yes, sir, I do since you told us about it." Even men in the militia, he says, get their friends in the regulars to "put down for a tooth-brush," so that they too may clean their teeth. Men buy a fourth pair of socks so that two pairs may go to the weekly wash, and two are kept in wear. Excessive cigarette smoking has diminished, spitting (of all habits the most disgusting in soldiers and sailors) is discountenanced, and has almost ceased. Altogether, there is the commencement of a higher standard of cleanliness and comfort. It is gratifying to know that even incomplete results can be attained; but the work must be continued in the regiment, or these men will get under the influence of traditions that may not be favorable to the new idea.

Training the soldier in this practical art of healthy living should be commenced in the depot but still carried on in the regiment. If the officers of the R.A.M.C. undertake it, it will give them a wider interest in the soldier, a deeper interest in their work. It will do

more, it will encourage and cement a comradeship and sympathy with the other branches of the service; it will get rid of that feeling that the medical officers are always fault-finding; they will have the soldier interested in his own welfare, and the sympathy and co-operation of the regimental officers. It is gratifying to know, Colonel Allport concludes, that this educational effort is not an isolated one; others have been working in the same direction, and he feels encouraged to hope that the movement may spread widely.

THE HORSE IN BATTLE.

THE part which a cavalry horse takes in a battle can never be filled by any machine, no matter what its capabilities. The horse seems, in the hour of battle at least, to take on characteristics which belong only to a being endowed with reason. He partakes of the hopes and fears of the conflict, the same as his rider. If he has been six months in the service he knows every bugle-call. As the column swings into line and waits, the horse grows nervous with waiting, and if the wait be long will often tremble and sweat. As the call comes to advance, the rider can feel him working at the bit with his tongue to get it between his teeth. As he moves out he will either try to get on faster or bolt. The lines will carry him forward, and after a minute he will lay back his ears, and one can feel his sudden resolve to brave the worst and have done with it as soon as possible. A man seldom cries out when hit in the turmoil of battle, and it is the same with a horse. Five troopers out of six when struck with a bullet are out of their saddles in a minute. If hit in the breast or shoulder, up go their hands and they get a heavy fall; if in the leg, foot or arm they fall forward and roll off. Even with a foot cut off by a jagged piece of shell a horse will not drop. It is only when shot in the head or heart that he comes down. The horse that loses his rider and is unwounded himself will continue to run with his set of fours until some movement throws him out. Then he goes galloping here and there, neighing with fear and alarm, but will not leave the field. When he has come upon several riderless steeds they fall in and keep together, and the rally of the bugle often will bring them into the ranks together.



phases of jumping to the several distributions of weight, thanks to which the jump is performed without unnecessary fatigue.

Consequently the rider intending to come the nearest possible to perfection, must be imbued with this truth: *that to jump an obstacle well, is not to hinder his horse; and not to hinder his horse is to let the different parts of said horse perform the actions they would if free.*

We will now study what the rider ought to do during the jump at different gaits:

First.—*How the rider ought to behave during the jump at the walk.*—It is easy now to deduce the way a man should behave during the different phases of the jump, so as to not hinder his mount by paralyzing his powers of action.

He should be careful to approach the obstacle squarely, hands low, reins lightly held, arms half bent.

During the whole execution of the jump he should sit close; for the first condition for having good hands is to have a good seat, without which it is impossible not to cling on to the reins to remain in the saddle.

Besides, the rider who loses his seat in spite of himself, or even intentionally, supports himself on the stirrups, which prevents his carrying the legs back to stimulate the horse when that is necessary. It is the same with the rider who grips almost solely with the knees; the joints of these parts are hindered and the same result produced as concerns the legs.

In principle, during the whole duration of the jump, the man's

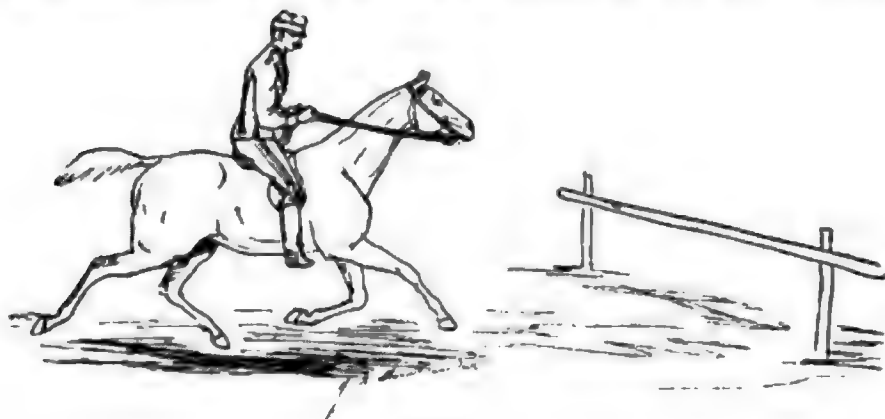


FIGURE 11.

body should remain almost vertical, so as to hinder the horse the least possible in the way he makes use of his own weight.*

In fine, if the rider's body inclines backward at the moment when the horse, after having raised the forehand, unbends the hind quarters, that part of the animal would be loaded with an unnecessary weight and consequently would have to make a greater effort to spring from the ground.

If, during the seesaw motion induced by thrusting forward of head and neck (second phase of jump) the moment when the animal has hind quarters in the air and forehand toward the ground, the man leans forward, he will not prevent the horse's jumping, but might occasion his fall by overloading his forehand when he grounds.

*Young riders, when jumping, being naturally given to carrying the body forward, becoming rigid and seeking to escape the horse's movements, it is expedient for some time to advise them to hold the body backward, before, during and after the jump. This position compels them constantly to keep in contact with the saddle, and accustoms them to connect with the horse's movements, an indispensable condition for having good hands.

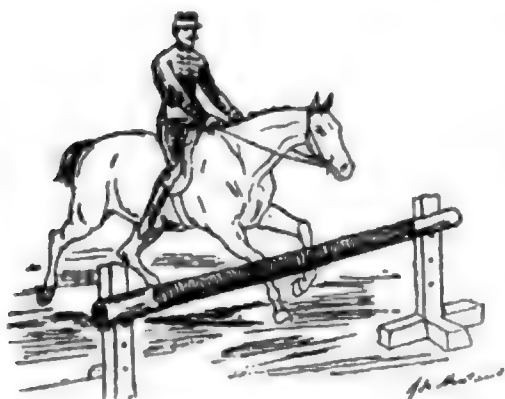


FIG. 14.—The rider's hands obediently accompany head and neck in their extension before withdrawal upon the trunk (1st phase).

neck during the three phases of the jump (Fig. 14).

This lightness of the man's hand on the horse's mouth is above all essential during the leap proper, when the horse extends head and neck their whole length to carry weight forward, and to call forth the seesaw motion (Fig. 15).

The rider should have, even during this second phase of the jump, a light enough touch in the fingers to let the reins slip the amount necessary, if, after giving his own arms, the horse's head and neck call yet for further extension (Fig. 16).

This is what happens every time an obstacle of some height is jumped at a walk, the animal, almost deprived of any start, being obliged to jump almost solely by way of using his own weight during the different phases of the jump, otherwise stated, by a very pronounced thrusting out of head and neck.

Suppleness in the arms is quickly enough acquired; but much practice is necessary to obtain light touch in the fingers. Neverthe-

In this position, moreover, it would be impossible for a man to help the horse in case the latter stumbles.

The rider's arms should unbend more or less to permit at the same time:

Of the man's body leaning backward.

Of extension of the horse's head and neck.

So then, at some meters from the obstacle, the rider's arms should give enough to allow the horse's mouth to feel slightly the hands (Fig. 13). The latter should obediently accompany the animal's head and

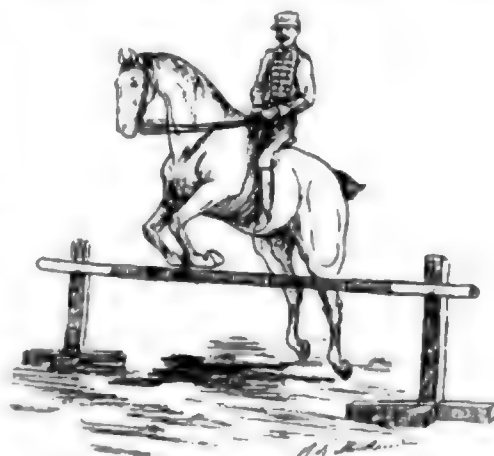


FIG. 15.—Beginning of second phase (horse unbending the hind quarters).

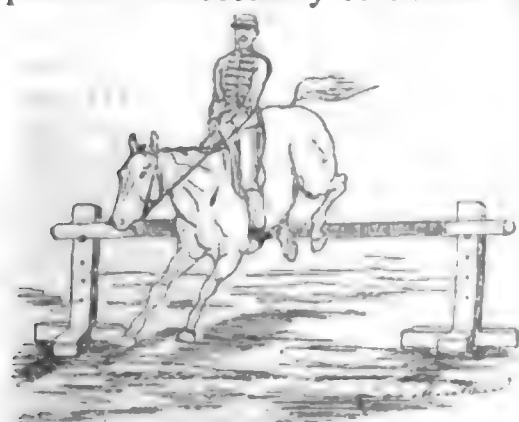


FIG. 16.—The rider's hands obediently accompany head and neck (second phase of jump).

less this last quality is indispensable, when, holding the reins with both hands, serious obstacles are approached at slow gaits, the animal then leaping by the use he makes of his weight in distributing it unequally and successively on the forehand and hind quarters.

Summing up, the arms perform the office of springs, which should yield to the motions of the rider's body as well as to those of the horse's neck and head. In truth, the play of these springs is determined either by the rider's body leaning forward or backward, or

by the horse's head and neck withdrawing upon the trunk, or extending away from it, or finally by the two factors together, as when, in the second phase of the jump, the one extends forward while the other withdraws backward.

It is this flexibility in the arms and light touch in the fingers that it is indispensable to acquire perfectly enough for the horse to jump, when held, with as great facility as when free.

These two qualifications, flexibility in the arms and light touch in the fingers, should allow the horse to do with head and neck what man does with his arms, when feet together he wants to jump upward some distance.

To prepare for the jump he bends down on his legs at the same times that he carries his arms to the rear; he next vigorously

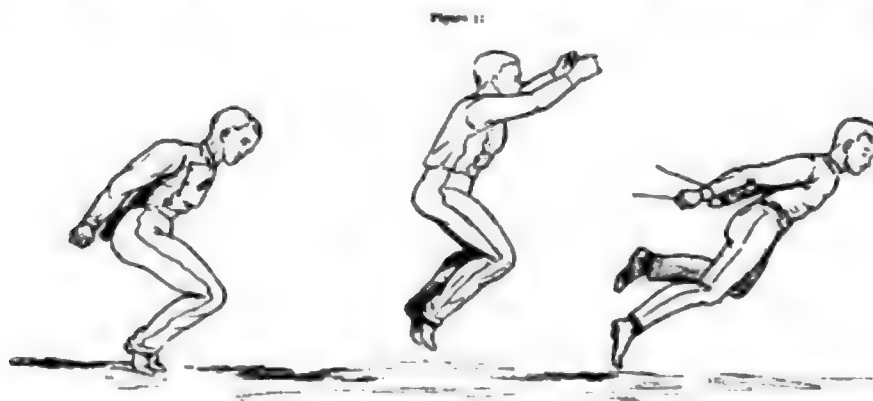


FIG. 17.—He bends down on his legs and carries his arms forward. He thrusts his arms forward and into the air. Deprived of use of his arms.

exerts the calves and launches his arms forward in the air to give him the start that allows him to jump well.

What would happen, if at the moment the man throws his arms forward to help him clear the obstacle, someone had just pulled them back by stretching, more or less, strings previously attached to his wrists, even though these strings were of India rubber? Evidently, his jump would be badly interfered with, and might cause a fall (Fig. 17).



FIG. 18.—The rider wrongfully holds on to the horse's mouth. Impossibility of the horse's seeing the ground on which he should land.

The rider who has not flexibility in the arms, necessary lightness of touch in the fingers, commits the same mistake as the man pulling back the arms of someone jumping, at the moment he throws them forward (Fig. 18.)

When head and neck need be no further extended, which happens when the horse grounds, or is about to ground with the fore feet, the rider also should no longer yield the hand; otherwise he would cause the horse to cease feeling the bit, and the animal, suddenly losing the support that had never failed him during the whole performance of the jump, might fall. The rider should feel his horse's mouth to

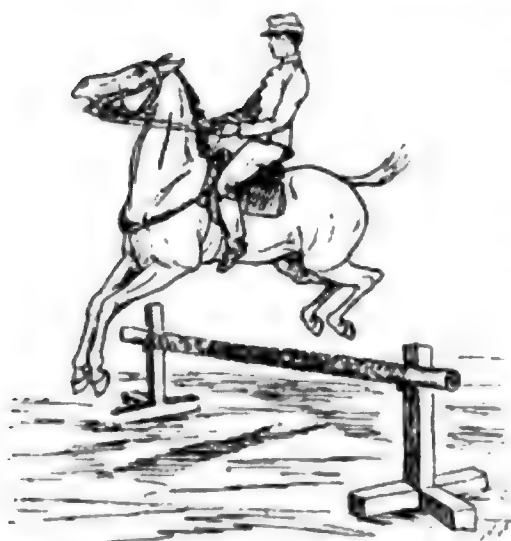


FIG. 19.—Lack of flexibility in the arms.

badly. If, after having himself leaped some obstacles in a gymnasium, one has taken account of the important rôle of his own arms at the moment that he lands on the other side of the obstacle, he will be persuaded of the benefit the horse derives from using his balancing pole, which is no other than his head and neck.

It is necessary to warn riders against faults to which they are given as well as against some prejudices.

Before jumping an obstacle, in place of letting the horse's mouth feel their hands, they too often use these hands so as violently to take hold of the horse's mouth. Thus this action at once prevents the animal from thrusting out his head and neck in the last strides before the obstacle; moreover, it hurts the most sensitive part, to wit, the mouth, that no longer will dare, in the second phase of the jump, bear on the reins in order that head and neck may be extended and thus carry weight forward (*Fig. 19*).

The result is a badly performed jump.

In fine:

The take-off is hindered, the horse not being able to make it at the spot that his instinct might have pointed out.

In the leap proper, the horse not being able or not daring further to extend head and neck to properly redistribute his weight is obliged to bring into play a very great amount of muscular energy to clear the obstacle.

Finally, instead of grounding with the fore legs first and head low enough to permit his eyes to judge the spot where his legs should be placed, the horse lands head high, hind legs touching the ground at the same time as fore legs, or sometimes even before, which causes

*I am not thinking of saying that once launched in the jump man and horse could change their direction; but it is certain that while the leap is making, alighting on a stone or in a hole can be avoided.

be ready to aid him in case of a stumble while landing; he must, however, carefully avoid holding back his head unnecessarily under pretext of supporting him; the horse thus hindered would no longer be able to choose the spot favorable for landing, and would be liable to put his feet in a hole or on a stone and to give himself a sprain;* he would be deprived of a real balancing pole that prevents his falling at the instant he reaches the ground. The want of freedom in using this balancing pole is not only the cause of numerous falls in grounding, but again of the strains and injuries horses get in landing

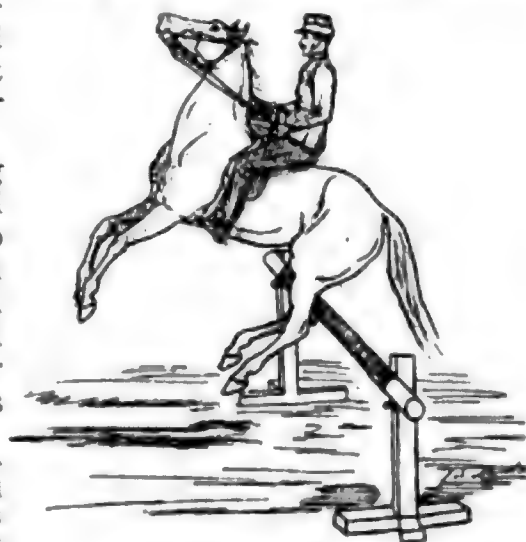


FIG. 20.—Jump "en chandelle."

the loins and hocks great suffering. This is what is called jumping "*en chandelle*" (Fig. 20).

There is but a single case where the rider ought to take hold on the horse's mouth, that is when he feels that the animal seeks to avoid. He will deprive him, it is true, of a great part of his means for jumping; but first of all he must make him jump, and consequently take possession of the helm; in other words, of his head and neck, at the same time vigorously urging him by the use of the legs.

It is regrettable, moreover, to have to resort to this extremity, for often the animal will lose confidence, and will no longer dare to support himself on the bit.

The rider should not then use this means until forced thereto.

Above all, he should not conclude, in order thus to deprive the horse of part of his powers and thereby to provoke either refusal or avoidance, that *he must hold his head, must not give him his head.*

These two expressions, too often made use of without their true meaning being known and the application of which requires on the rider's part so much tact and skilful management, mean in sum:

That the rider, while entirely avoiding in any way hindering, should make the animal feel that he holds him, and that he is ready, if necessary, to impose his will upon him.

There are, however, some horses with strong necks, with coarse mouths, that succeed in overcoming the resistance of the rider's too rigid arms and perform their jump, conforming nevertheless to nature's rules. It then happens that,

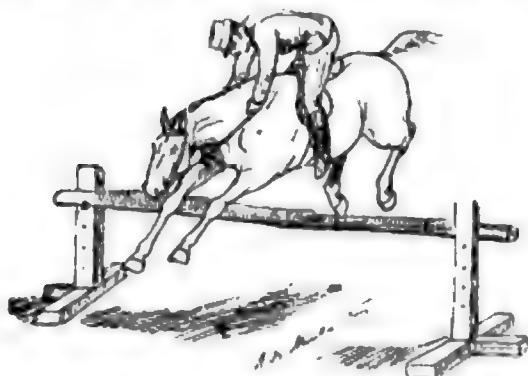


FIG. 21.—Rider lacking flexibility in his arms, consequently is pulled forward by the extension of head and neck (bowing).

in the second phase of the jump, the arms, nervously tense and unyielding, the horse's head and neck pull the rider's body abruptly forward (sometimes even jerk him from the saddle) which may occasion falls by overloading the forehead at the moment it reaches the ground (Fig. 21).

The rider who at the moment when the horse is taking off gives head and neck freedom to stretch out, has not always had flexibility enough in his arms to accompany said head and neck when they return upon the trunk, with the object of helping the forehead to rise. The reins are then hanging loose; the horse for an instant finds himself unsupported. So when in the second phase of the jump the animal thrusts forward head and neck to shift weight forward, these same reins suddenly tighten, and the horse's mouth receives a sudden jerk all the more felt the more the rider's hands grip tight.

We have previously studied the serious troubles that result from this sudden jerk.

It is somewhat the same with riders who, with the object of giving the horse greater freedom in extending his head and neck, carry the arms suddenly forward, even before the horse has asked to stretch out his head.

The importance is then seen of keeping a gentle feel of the horse's mouth, without, however, this feel harming in the slightest the different motions of head and neck.

Second.—*Way the rider should behave in the jump at full gallop.*—

That the rider remain seated, body almost vertical, *that he suppress himself to some extent on the animal*, so that the latter feels nothing more than the dead weight and may use both head and neck, as when free; such is the great difficulty in jumping at the walk, because at that gait the movements of head and neck are very pronounced. But at a lively gallop they scarcely longer exist, since the horse is already extended; the execution of the jump becomes for this very reason quite easy. It is easy enough for the rider to have some flexibility of the arms so as to accompany head and neck in their slightly marked movements (Fig. 22).

At all times the rider should avoid falling on the neck at the moment that the horse plants his fore feet on the ground, as this movement would too heavily load the animal's forehead at the moment of grounding, and make it impossible for the man to help him in case of a blunder.

Moreover, it is quite wrong to attribute to the hard blow from the animal's loins this forward jerk of the man. At a walk, it is the consequence of the rider's bad hands (he can be pulled from his saddle as we have explained above) and at a full gallop of the jolt from the animal when he reaches the ground.

The race-horse who knows his business perfectly should jump without manifesting any pause, and consequently his jockey should have no trouble in keeping his seat, since the movements of head and neck, that are the principle causes of the rider's displacement, may be said to not exist at this gait. Without difficulty, the jockey at the start can allow himself to take obstacles with short reins, although crossed in both hands (as is necessary in order to hold a racer in his gallop); for the hands may remain sensibly fixed, since the head and neck are extended by only a very small amount. Things do not always happen thus; it is not unusual to see excellent steeplechasers, particularly when about to jump a new obstacle, show a pause, which is the cause, during the jump, of different movements of head and neck, more or less marked as the pause was more or less pronounced. The jockey ought then to have touch of the fingers carried to the extreme limit; for leaning back to assure his seat, he generally extends his arms, and if during the execution of the jump he would remain in the saddle, while allowing the horse complete freedom to stretch out head and neck, he is forced to allow the reins to slip through his fingers, a thing not easy to do with the habitual hold of the reins and still less so with reins crossed in both hands, as it is proper to hold them when riding a race. Very few jockeys have this light feel of the fingers; so we see a large number of them more or less pulled from the saddle, hindering their horses and thenceforth causing numerous falls. For during a jump the least constraint, that at an ordinary gallop only bothers a horse, can at a fast gallop make him fall.

Instantaneous photographs, taken recently on different race courses, have demonstrated the truth of our opinion. We have often therein noted jockeys, during the jump, absolutely out of the

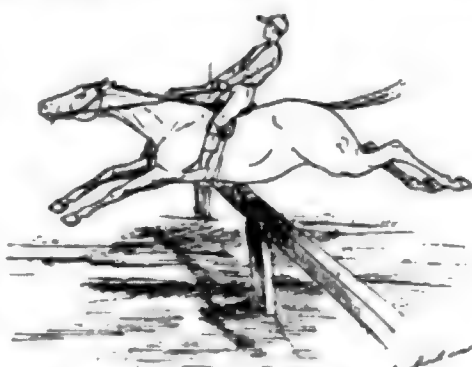


FIG. 22.—Jump at full gallop.

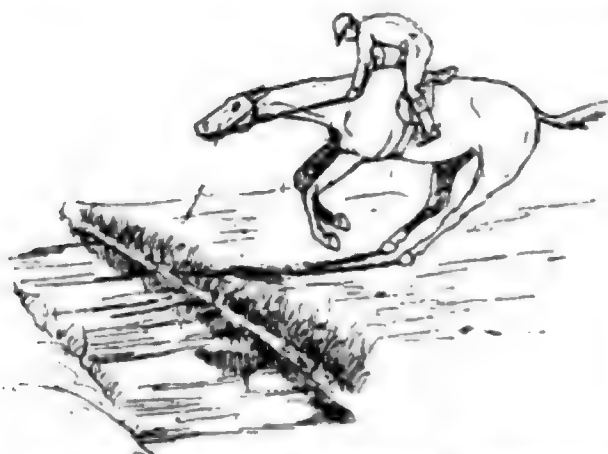


FIG. 23.—Jockey thrown on to the neck following sudden stop of his horse.

arms extended, this light feel of the fingers, which already is only too difficult to have when the habitual hold of the reins is used.

Why then take, when it is not necessary, a hold of the reins with which the feel of the fingers becomes still more hard to obtain?

If, at the full gallop, the horse committed the error of making a pause before the obstacle, the jump would become more difficult for the rider than at the walk. Indeed, the man thrown on to the neck at the moment of the animal's sudden stop is yet further so by the spring the horse makes immediately after (Fig. 23); and as the leap is made like a standing jump, so that the movements of head and neck are quite pronounced, the rider will be violently torn from his saddle if he has not light feel of fingers carried to the extreme limit* (Fig. 24).

The experienced rider who shall have remained well seated in his saddle, in spite of this stop, alone would be able to clear the obstacle without being thrown upon the neck, and without running the risks that might be the consequence.

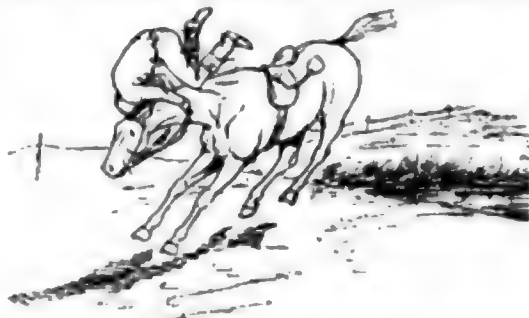


FIG. 24.—Jockey violently pulled from his saddle by extension of head and neck which has immediately followed the sudden stop.

*At the opening of the Paris hippodrome, Avenue de l'Alma, the management of this amphitheater wished to have a race as a mere advertisement. The Auteuil track was chosen. A negro jockey, wearing an extraordinary jacket, rode an old horse that, suffering from sprained tendons, had lost all confidence in jumping.

The horse at full speed reaches the water jump at the grand stand, makes a pronounced stop that already sends the negro on to his neck, then, gathering himself like a hunter, leaps, so to speak, from a stand, extending, as a consequence, head and neck their whole length, which he had drawn back upon the trunk after stopping. The negro, instead of yielding to the extension of head and neck by giving the arms and by feel in the fingers, grips the reins with all the strength he can muster. Thus is he torn from the saddle with such violence that he is seen to describe an arc of a circle, having for radius the taut reins that he continues to hold in his tight-closed fingers. Landed on the ground in front of his horse, he does not even let go the reins and is dragged for some bounds, when finally the horse finishes by slipping his bridle. Our negro got up without being hurt, and had not quit his reins.

1. The steeplechaser *Ventriloquist*, winner of the Auteuil grand stakes in 1876, was an excellent jumper; but during the last two years that he ran at Auteuil he came up to obstacles holding back, and landed like an animal suffering from sprained tendons.

However, this half-lame horse still won races, and never fell, because of the admirable manner in which his jockey, H. Andrews, rode him. The latter, thanks to his sense of feeling in the fingers, allowed the horse at every obstacle to use his head and neck during the jump, absolutely as though he had been free. *Ventriloquist*, having left the Marquis of Saint-Sauveur's stables, was no longer ridden by a man possessing as much feeling in his fingers as H. Andrews, and not only thereafter was he incapable of winning a race, but he could not even complete one, I believe, without falling.

Third.—*The way the rider should behave in the jump at intermediate gaits.*—The principal preoccupation of the rider should be not to thwart in executing the jump, the play of the horse's head and neck, which play is all the more pronounced as the gait is less rapid. It is understood, then, that the more quietly the animal goes, the more the man has need of sense of touch, for the jump to be executed under the best conditions, and that on the other hand, the faster the horse goes, the less ticklish will be the rider's task in fulfillment.

From the preceding we deduce that a horse that throws the rider forward while jumping (*bowing*, as it is called) has unjustly generally, the reputation of having a rough throw of the haunches. This movement of the man's is in fact but the consequence of his bad hands; as to the horse, it shows a mouth hard enough to resist these hands and to master them, even to pulling the rider from his saddle with more or less violence.

CHAPTER V.

HOLD OF REINS ADVISED.

A quite recent fashion consists in holding the reins in both hands during the whole execution of the jump. We see in this great inconvenience; for this hold of the reins demands on the rider's part, if he does not wish to hinder his horse, great flexibility in the arms and very delicate sense of touch in the fingers in order to let the reins slip at the horse's demand. Therefore, in our opinion, if flexibility of arms can be obtained with practice, sense of touch in the fingers remains the attribute of very rare artists, and is entirely out of reach of the great generality of riders, though experienced, for whom we are writing.

Why not imitate our predecessors, if they are to be judged by old engravings, French and English? Why not profit by what the whippers-in still do at the hunt, always first to jump or adroitly to pass obstacles they meet, although often they are very bad riders, and ride very bad horses? Both alike hold their reins with one hand.

Taking inspiration from these examples, we have sought the hold of the reins permitting the rider to be master of his mount before reaching the obstacle, in order to prevent his avoiding it, all the while hindering the horse the least possible before, during and after jumping.

The one we have always used, and which has seemed to us best to fill the conditions sought, is the hold of the reins called the German style, that is the four reins in the left hand, bridle reins proper in the middle, a finger between each rein; the right hand holds both right reins (one or two fingers between these two reins) in front of the left hand, up to the instant that the horse, arriving at the obstacle, is felt to be about to spring, and quits them at the very instant of jumping, to resume them again as soon as the obstacle is cleared (*Fig. 25*). This hold of the reins has appeared to us to fulfil all conditions sought for.



FIG 25.

Indeed, before reaching the obstacle, and if necessary it allows, in withdrawing the right wrist from the left, of separating the reins sufficiently for the



FIG. 26.

horse to feel himself well under control, and even of separating them entirely if one has an obstinate horse (*Fig. 26*).

During the jump it prevents the man, in spite of himself, from in-

terfering with the movements of head and neck, at the same time that it gives him every chance not to be pulled out of his saddle. For, while the rider drops the reins from his right hand, he is careful to let this hand fall and even carry it along by his side and to the rear, which draws the right shoulder likewise back and keeps him seated; besides, the horse has every help in extending head and neck since he has only to overcome the resistance of a single arm, that, even with an inexperienced rider, because of the forward movement of his left shoulder (following the movement of the right shoulder to the rear) is too weak to communicate to the horse's mouth the sensation of being held by a rigid agent (*Fig. 27*). The arm under those conditions, is found to be a true spring, and quite a mild spring, that follows naturally movements of head and neck. Finally, after clearing the obstacle, the rider adjusts his reins, if needed, and replaces the right hand as before jumping.

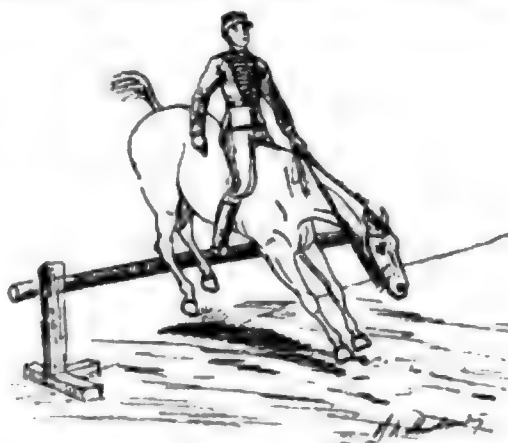


FIG. 27.—The rider offers no opposition to execution of the jump.

During the first instruction we think even that the trooper, during the execution of the jump, should throw the right arm to the rear and up in the air, as if he wished to give someone placed behind him a back-handed thrust (*Fig. 28*).



FIG. 28.

This motion will be condemned by some as awkward. But in the first place such is not the opinion of many others, and again were it the case, we still prefer to pass over this defect, if it be one, provided it help our troopers to jump without hindering their horses.

Every time we have been able to try this method with recruits it has been wonderfully successful; after only a few lessons they jumped with confidence, and several times in succession, the obstacles on the drill ground, and the horses, not

attempting to avoid, were quiet before, during and after jumping.*

* At that time, being at Saumur, before one of our chiefs whom we wished to convince, we employed this method with a riding squad of probationary assistant veterinaries who had never jumped an obstacle. By following the progression indicated further on for the education of the men over obstacles, all the pupils, at the end of the period, which had lasted an hour, jumped with confidence at each circuit of the hall, a bar 0 m. 50 high, and this in better form, with regard to jumping correctly, than a squad of old troopers holding reins with both hands.

The reins should be of equal length so that the horse bears evenly upon all four; for, if the bearing is uneven, there would be a liberation of the jaw and the animal would not take hold on the rider's hand. We do not favor the use of the snaffle by itself when the horse is fully bridled; first, because the jolting bit inflames the jaw, causes it inopportunately to open at the moment when, on the other hand, it ought to close in taking hold, and next, because the snaffle on a bridle always being slender and therefore sharp, the horse supports himself badly upon it when used by itself.

Of course we do not apply this hold of the reins to riding races. We speak here only of what concerns hunters or chargers. At times, however, the jockey while jumping may drop the reins from one hand; we have seen this done very properly under some circumstances by men knowing their business perfectly.

CHAPTER VI.

STUDY OF THE DIFFERENT METHODS OF TRAINING AT OBSTACLES.

A horse may be trained, first at large, second on the longe, or third when ridden.

I. TRAINING WHEN AT LARGE.

We know of two ways:

That in a straight away chute.

That on a track in a ring.

First.—*In a straight away chute.*—This method, which has some advantages, presents, however, serious difficulties:

In the first place, everybody has not a chute at his disposition, and it is always costly to set one up. Again, time is necessary, and occasionally trouble to catch up the animals at the farther end of the chute. Moreover, if it is desired to have the latter traversed several times in succession, which is necessary to hasten the training, the animals often refuse to enter the chute, doubtless because they fear the blows of the long whip, which must be given at each obstacle in order to prevent their pausing before jumping.

Besides, this training requires a numerous personnel until the horse is well trained; for one or two men are necessary at each obstacle to sustain him with the whip, and thus prevent hesitation, wandering about or stopping, especially across the track.

I will add that the horse that has been educated in a chute, having always jumped the same obstacles, will not be used to natural obstacles, so different from others. Also, when you wish to jump in the open you will find yourself often in presence of great difficulties.

But what we blame most in this method is that the animal, jumping only quickly, does not learn to use his head and neck at reduced gaits; and as to that, if it is proposed to train a horse for hunting or war, where jumping is done at paces relatively shortened, the chute does not fulfil the ends we seek.

The advantage of this system, especially for race-horses, is that if time can be spared during a number of sessions to keep at obstacles of little height and width, so as to avoid all wavering and all stopping, horses that jump very quickly will have been obtained. Also we advise, if one has the luck to have a chute at his disposition, making the horses jump in it once or twice a day, before or during the period of training on the longe, our principle being that a horse is not reputed trained unless he jumps well at all gaits.

We shall, however, make one observation on the use of the chute. The matter of catching up the horses at the other end requires quite a large number of men, and at times gives rise to accidents if the following precepts are not conformed to, and with which we have been quite satisfied.

The chute should be of the same width throughout so as to be capable of use for horses with riders. But on each side of the exit, for a length of about five meters, the wing barriers about 2m. 50 high (so that a rattled horse might not try to clear them) should be topped with boughs and movable around a vertical axis in such a way as to meet at their ends in the middle of the chute which thus will end in an angle. The horse that has jumped is then caught up by a single trooper coming behind him, and calling him as in a stall at the stables.

After two or three repetitions of this exercise, if the horse has been rewarded, he will let himself be caught up without difficulty.

A feed box full of oats might even be fitted to one of the barrier, at the end of the chute, which would help to quiet the horses.

Second.—In a circular chute—This method is essentially incomplete. Only obstacles of very little width can be jumped there, the horse at all times bending on the circle.

Furthermore, the animal only jumping obstacles of little importance and at relatively slow gaits, necessarily acquires the habit of springing near the obstacle; and if this exercise is persisted in he will retain this habit, the serious drawbacks of which will be appreciated later on when it is desired to negotiate serious obstacles at full speed.

In fact, this training presents the same defects as that in the straightaway chute, because of the impossibility of varying obstacles and the difficulty of obtaining changes in speed judged proper.

II. TRAINING ON THE LONGE.

As we shall see, the different ways of generally using the longe do not accomplish the end that we seek. We shall, however, examine the methods most employed.

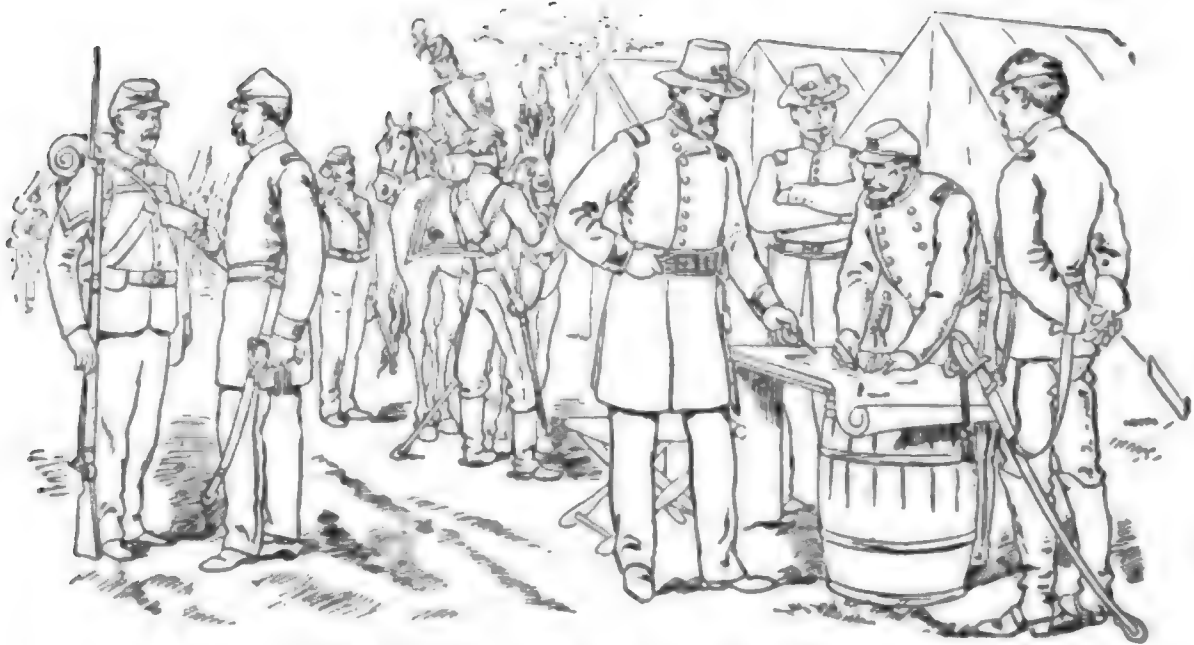
Some put the instructor, who holds the longe, on the far side of the obstacle; the horse is on the near side, at some distance, held perpendicularly to the obstacle by an assistant. At a given signal the assistant lets go the horse, that a third person, provided with a long whip, urges vigorously from behind, while the instructor pulls forward on the longe.

Although pulled by the instructor, the horse arrives at the obstacle most often by wavering, seeks to avoid it and even succeeds sometimes when the obstacle is not long.

If he jump, it is in desperation and under bad conditions, the play of his head and neck being hindered by the instructor. Finally, having but little start, he cannot clear the distance.

In spite of that the animal will acquire, at the end of a relatively short time, apparent willingness, and will give complete satisfaction to persons who see a liking for obstacles in his haste.

As to ourselves who, once willingness in the horse is obtained, consider our task as scarcely begun, we do not admit of this method at all. We believe, on the contrary, that willingness is only lasting if it is the result, not fear of punishment, but of jumping performed without fatigue and therefore capable of frequent repetition. Now



Comment and Criticism.

"Accountability for Public Funds."

THE interest felt in the subject presented in the article in the May-June number of the *JOURNAL OF THE MILITARY SERVICE INSTITUTION*, entitled "Accountability for Public Property and Funds," by Col. H. O. S. Heistand, M. S. Dep't, is manifested by the prominence given to it in the service journals.

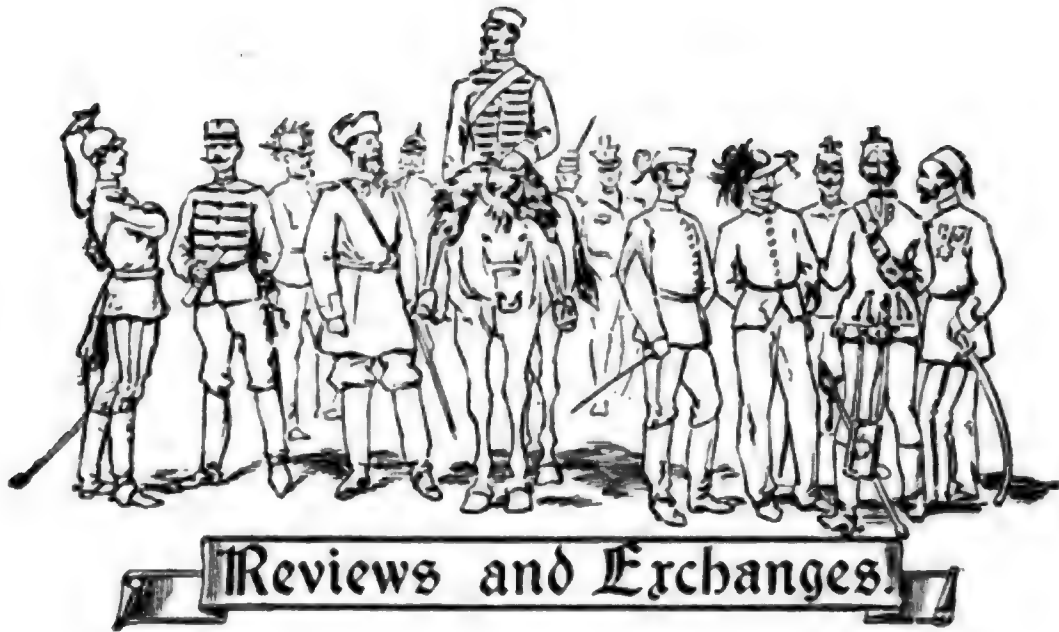
The article was reproduced in full in the *Army and Navy Register* and was made the subject of a leading editorial in the *Army and Navy Journal*, and numerous letters of comment from officials and civilians have been received, though space will only permit very short extracts from a few of them, and it is proposed to print others in a future number of the *JOURNAL*.

Mr. C. M. Busch, a capitalist and State printer of Pennsylvania, says:

"It seems to me the claim that extra clerical force would be needed is nonsense. It takes no longer to keep an account properly and simply than it does to audit and discard the mistakes in an ill-kept one. If kept at headquarters by men especially trained to the work, no detailed audit would be necessary, and the balance never arrived at by uncertain methods."

Maj.-Gen. George W. Davis, U. S. A. (retired), says:

"I have read the paper attentively, and I am very glad that you have started a discussion of this subject. I agree with you as to the need of a change, and it seems to me that you have stated some facts, known to all of us, so cogently and forcibly, that it cannot but have an effect."



Crisis of the Confederacy.

IN the "Crisis of the Confederacy" (published by Longmans, Green & Company, New York), Capt. Cecil Battini, Fifteenth the King's Hussars, has produced an interesting, ably compiled and readable book, if one be in full sympathy with the Secession Histories of the events of 1863 and 1864 in the War of the Rebellion.

It is the narrative of the events of that period as he finds them presented to the English public through the writings of either Confederate officers or their sympathizers.

This is the most valuable book of the kind we have yet had added to our war literature, since it is frank and earnest in its good intentions, and gives the Confederate view of everything.

When, in the preface, the author writes: "The Americans still hold the world's record for hard fighting"; and again, at the termination of this history of the continued struggle and bloody contention between the armies, he adds: "It has not seemed necessary to attempt a eulogy upon the Army of the Potomac or the Army of Northern Virginia;" we at once feel that he has a right to our respect and belief in his honesty of purpose.

He gives as his authorities for this history the Comte de Paris, Colonel Long, Adjutant-General McClellan of Stuart's Staff, and Gen. A. A. Humphreys of the Union Army; but states also that he "sought inspiration from the pages of Henderson's Life of Stonewall Jackson." His volume shows that in this search for inspiration he was successful; he was inspired all through.

It is an honest book, written by an able officer, but the author has not been able to examine all of the official records. It is a narrative written from the Confederate standpoint. The descriptions of movements are from that side and treat of the action as if the author or authors quoted had fought against the Union.

In the space allotted to this brief notice of this admirable work it is impossible to review it. To make a simple statement of what Captain Battini writes without showing wherein he commits grave errors would be to follow the example of the reviewers who know little of the War of the Rebellion from personal experience.

The writer of this article finds many of the old misrepresentations

made by Rebel historians repeated as matters of historic truth. He points to the following as instances of this careless writing:

At the battle of Gaines' Mills, according to Rebel records, General Porter is reported to have had 45,000 men. He had 17,900 on the field. The Rebels acknowledge that they had 5500 under Longstreet, Hill and Jackson. Captain Battini gives us the Rebel version of this battle:

Porter was charged with the duty of holding the tête du pont at the bridges over the northern portion of the Chickahominy. He held the ground until nightfall against three times his numbers. It is declared in the Southern version of this battle that Porter was routed; but that little band of Fifth Corps men left the field sullenly and only after the object to be attained was fully accomplished. Supports to Porter came too late and since a retreat had been determined upon, and all of the advantage gained by holding a large portion of the Rebel Army north of the James were to be thrown away, it was useless to hold Porter at Gaines Mills or to reinforce him to the necessary extent to enable him to threaten or turn the rebel corps.

In describing the Battle of Gettysburg Battini is led into many errors by his authorities.

On July 3d—How could Stannard with his Vermonters have held the Clump of Trees and still attack Longstreet's men on the flank? That Clump was held by Pennsylvania men. How could Pickett order *his portion* of the charging mass of 14,000 to retire? No one saw Pickett in the front and no one in the front got back to the Rebel lines. The crowd of prisoners coming in through Webb's line had no room—their surrender *looked like* a piercing of the line.

He talks of earthworks—the breasts of the Union soldiers were high above the two feet of stone wall. These were the only breastworks.

On July 2d—The regiments of Wright, which are said to have advanced so as to overlook the Union position, were allowed to enter the abandoned battery—this was done in order that they might be captured, as most of them were, by Webb's Regiments, prepared to perform that service. Wright was incautious.

The claim that "heights" were stormed and taken is again made. The "heights" did not exist—the field is almost level.

The romance of "two lines of fire" and earthworks is all repeated in spite of maps and official reports and surveys.

On page 259, relating the occurrences of Gregg's defeat of Stuart—a synopsis of the fight probably made from the account of it given in McClellan's "Life of Stuart," Captain Battini states:

"Finally the Federal horse were forced back, but their guns protected their retreat which they accomplished slowly and in good order toward Rock Creek."

Stuart had 6000 cavalry; Gregg 5000. Stuart advanced from behind Rummel's house—the battle was fought to the south of it—Gregg took and occupied the position held by Stuart. Rock Creek was to his rear and left, or southwest; Rummel's house was to the north. It was Stuart who retreated. "The pursuit of Stuart was kept up past Rummel's; Stuart was driven into the woods beyond or north of it. The line of fences and the farm buildings, the keypoint of the field which in the beginning of the fight had been in the possession of the Confederates, remained in ours at the end"—(see Rawle, page 25).

Stuart's adjutant-general must be responsible for this misrepre-

sentation of the results of this fight, yet he must have realized Stuart's discomfiture since he retreated with the crowd to the York Road.

However, Captain Battini has given us a scholarly criticism of these campaigns of Gettysburg and the Wilderness, and although he is in full sympathy with the leaders in the Rebellion, he shows a spirit of fairness, a full appreciation of the fighting qualities of American soldiers, and it is to be regretted that the "inspiration" he sought was so certain to lead him into a repetition of the often contradicted and absurd claims of partizan writers for the English press.

A. S. W.

The Victoria Cross.*

THIS account of the 520 awards of this coveted piece of bronze has mainly followed the official reports published in the *London Gazette*; the photographs of the recipients to the number of 392 materially add to the personal interest which the recital of the brave deeds arouses.

Queen Victoria by Royal Warrant, dated January 28, 1856, created the decoration, to be "awarded to those officers or men who have served us in the presence of the enemy, and shall have then performed some signal act of valor or devotion to their country." The merit of conspicuous bravery, it is stated further, shall alone be held to establish a sufficient claim to the honor.

In August, 1858, the Queen was pleased to extend eligibility to those in the service, by whom life or public property might be saved under circumstances of extreme danger, under the rules theretofore promulgated; and in July, 1859, the honor was extended to certain non-military persons who, as volunteers, had taken up arms against the mutineers in India. In January, 1867, the privilege was extended, under the rules, to colonial forces acting with the royal troops in military operations "as may be necessary." In April, 1881, her Majesty decreed that the qualification should be understood to be "conspicuous bravery or devotion to the country in the presence of the enemy," and that officers and men of the auxilliary reserve forces (naval and military) should be eligible under the rules.

In August, 1902, King Edward authorized the delivery of the decoration to the representatives of certain officers and men who fell in South Africa in the performance of certain acts of valor, which, had they survived, would, in the opinion of the Commander-in-Chief, have entitled them to be recommended for the distinction.

These awards have been distributed among branches of the service as follows:

Royal (and late Indian) Navy.....	41
" Marine Artillery.....	2
" " Lt. Infantry.....	2
Cavalry (nineteen organizations).....	48
Royal (and late Indian) Artillery.....	43
" " Engineers.....	27
The Military Train.....	2
The Foot Guards: Grenadier four, Coldstream three, Scots five	12

**The History of the Victoria Cross.* By Philip A. Wilkins, Illustrated, pp. 443, quarto 1904, Archibald Constable & Co., London, Ltd.; E. P. Dutton & Co., New York.

The remaining crosses are distributed among:

Infantry (eighty organizations).....	252
Old Indian Army (thirty organizations).....	59
Colonial Corps (twenty organizations).....	32
	520

It will thus be seen that every quarter of the globe has possessed recipients of this decoration.

An analysis of the deeds so immortalized would be interesting from the standpoint of morale, heredity and *motif*. Whether any of these deeds have had their origin or been stimulated by the zeal to win the decoration, and how many of them have been the unconscious expression of a real heroism, an inherited or acquired character, no power of analysis could reveal.

The expression of the conception that the soldier's life is not his own, but the property of the sovereign or commander, held for the time in the keeping of the soldier as a trust to be wisely disposed of in the cause of the sovereign, appears to have controlled the awarding power. No special uniformity of decision can be found, except that a spontaneous admiration and tribute of comrades or commander appear to mark these deeds of valor.

Some achievements which were plainly in the line of duty have been apparently signalized for these reasons only.

The historical past is united with the sentimental present and the military future in making awards.

"Without a thought for his own safety" is the prominent element in the official report of a dangerous act, "coolness and gallantry" another. "Unhesitating," "precipitate dash," "unflinching determination," "devoted conduct," "greatest gallantry," "daring energy and example," "conspicuous courage," "heroic conduct," "conspicuous bravery and humanity," "conduct zealous, resolute and self-devoted," "bravest soldier in the regiment," are some of the generalizations in these reports.

It may be conceded that the thought so couched in varying language is difficult to define, and that words would fail to characterize each act; the actual impression which the deed made upon survivors is the chief factor. Some men have won a reputation for being perfect gods of war, fighting with such swiftness, unerring skill and demoniacal energy, as to compel astonishment and admiration. Thus *e. g.* White of Ladysmith fame in a charge on Afghans in 1879, and another at Kandahar in 1880 capturing a piece; or Hartigan, a sergeant, who dashing unarmed at four rebels attacking Sergeant Cross, smashed A in mouth, seized his tulwar, killed B with it, and wounded C and D, although himself receiving several severe wounds in the fight.

What psychological classification can be made of the element which existed in common in these gallant men and which made them regardless of self, sympathetic for comrade, patriotic and determined for the flag, perfect in cool and courageous assault, or impetuous beyond words in wresting victory from defeat?

In a short series of translations printed in this Journal last year of writings by Dr. Campeano, of the Roumanian Army, a most clever discussion of the psychology of the soldier portrays some of these elements which relate to courage, obedience and devotion.

He regards the army life as a media into which the soldier enters

only to undergo, as by endosmose and exosmose, a transformation, slowly and peaceably by infiltration whereby a result is accomplished. This having operated on many men an army class is formed constituting a caste, as distinct as any social or religious power could create. He says: New soldiers have motor disturbances through awkwardness and timidity, and timidity creates liars, and mendacity is inconsistent with great courage. Hence the army by training must give certitude and honor.

The psychic force of army training to create courage, discipline, devotion and *amour propre* is shown unquestionably to be the basis of most of the deeds which have won the cross.

But there are hereditary and racial elements which make possible the army, and the caste of the fighting man, and these are evident in this group of 520 men. Sons of clergymen and business men have gone out, who had the bravery of Joan of Arc, or the dash of Marshal Lannes.

When Vice-Admiral Grenville died in 1593, saying: "Here die I, Richard Grenville, with a joyful and quiet mind for that I have ended my life as a true soldier ought to do, fighting for his country, queen, religion and honor," he enunciated the enthusiasm of one of this caste.

The United States Medal of Honor authorized by act of Congress in 1863 to be awarded "to such officers, non-commissioned officers and privates as have most distinguished or may hereafter most distinguish themselves in action," resembles the British decoration and has generally been bestowed with care and upon the recommendation of commanding officers. The handsome volume here noticed should be supplied to every post library in our army as an encouragement and inspiration to similar deeds of valor. C. E. L.

Last Hours of Sheridan's Cavalry.*

WHEN Cæsar premised his commentaries on the Roman-Gallic War by saying "All of which I saw and part of which I was," he set a hard task for all future military authors, as he had not only fought well, but could also write equally as well as he had fought. The result has been that one is apt to open a book by a military man expecting rather too much in the way of personal experiences. In this case, however, the author has told his story easily and graphically, and in a desultory way has made up a volume that holds the attention of the reader to the end.

The book, as its author says, is a reprint of his notes which Maj.-Gen. John Watts de Peyster rescued, edited and published in 1891 and 1892, and right here the writer of this article cannot help saying that few of us realize how much General de Peyster has done for coming writers, in just this way of hunting out, rescuing and editing papers relating to our wars that otherwise might never have seen the light of day in print. General de Peyster has an extensive knowledge of military affairs and he knows the importance of personal experience in non-official papers, especially those that shed a side light upon historical facts, and in this, his chosen field of research, he

**Last Hours of Sheridan's Cavalry.* By Henry Edward Tremain. New York. Bonnell, Silver & Bowers. 1894.

has collected and brought to the front much in the way of unconsidered manuscript from the pens of participants in various battles, that will eventually greatly aid the future historian, who, a hundred years hence, when all prejudice and bias regarding the War of the Rebellion of 1861 and 1865 shall have passed away will essay to write a true history of our great Civil War.

The author has added to his own notes much in the way of extracts from the pens of other officers that took part in the closing battles around and beyond Richmond and Petersburg in the last days of the siege, and during the retreat of the Army of Northern Virginia from Petersburg to Appomattox Court House, and in an appendix has given the reader copious extracts from General de Peyster's article "La Royale" on "the last twenty-four hours of the Army of Northern Virginia," and also a copy of the splendid oration of Gen. Francis A. Walker before the Society of the Army of the Potomac at Portland, Me., on July 4, 1890, and has also given ("for which much thanks,") copies of the now historical order of march of the Army of the Potomac, and the Armies of the Tennessee and of Georgia, at the final review of those armies at Washington at the close of our Civil War.

To the military student the book gives interesting episodes of the closing struggles between the Armies of the Potomac and Northern Virginia from March 30th to April 9, 1865, inclusive, and the tale is told in a fascinating way to even the civilian reader. It is a book that should be read as it was written—in a desultory way, a book to lie upon one's library table and to be taken up now and then and read thoughtfully.

The author is a keen observer, and one follows his description of the retreat of General Lee's army and its pursuit by General Grant's forces with the interest that always attaches to a well-told story by an intelligent participant. It is in such books especially, that the civilian learns to appreciate the hard work and difficulties of armies on the march, what they have to overcome in the way of stormy days, bad roads, seas of mud and short rations, and it shows the tenacity of good troops from the side of both the Confederate and Union armies in the attack and defense during the nine days of the retreat. The short reference to the fourth man and led cavalry horses on page 44 opens up a new vista to the unthinking civilian of one of the few worries that the commander of a mounted force in a wooded country has to overcome, in handling his command in dismounted attacks on the retreating enemy's trains.

In many side remarks the author thus emphasizes the routine annoyances that are constantly cropping out in an active campaign, and in this way, he gives an outsider a far better idea of the day's work of an army than he is likely to get in any ordinary volume on military subjects.

The daily movements of the two armies are closely followed and the way in which the cavalry moved, attacked, impeded and finally outflanked and threw themselves in front of the enemy at Appomattox Court House is concisely but graphically told, and the names of many gone and half-forgotten generals are again brought to mind, and their devotion to duty and undaunted valor blaze out on history's page as splendid examples to coming generations.

The fighting during the eleven days of the closing campaign of the Army of the Potomac from March 30th to April 9, 1865, was opened by Sheridan's cavalry at Dinwiddie Court House, Va., a little shire-town in Dinwiddie County, thirteen miles southwest of Petersburg.

and ended in the surrender of the Army of Northern Virginia at Appomattox Court House, another little shiretown in Appomattox County on April 9, 1865. These eleven eventful days are so crowded with military incident that it is exceedingly difficult to brief General Tremain's book in a short review. The battle of Dinwiddie Court House, on March 30th, which was fought by Sheridan with his cavalry corps only, and his assault and capture of the enemy's works the next day at the battle of Five Forks, April 1, 1865, fought by his cavalry and the Fifth Army Corps together, turned the right flank of the Army of Northern Virginia and compelled the evacuation of the entrenchments before Petersburg, thereby rendering the line of twenty-eight miles of earthworks in front of the rebel capital at Richmond untenable. Accordingly, General Lee notified President Davis of the Southern Confederacy at Richmond on Sunday morning, April 2d, that as his lines had been pierced he should immediately evacuate both Petersburg and Richmond, and that night he carried out his intention, and on the morning of the 3d of April he was out of his entrenchments and with his army on his way south.

The two Armies of the Potomac and the James lost no time in vain regrets, but immediately started in full cry in pursuit. It was the beginning of the end, and it is the story of this pursuit by the cavalry, and incidentally the work of the infantry, that General Tremain tells so well, that makes his book so attractive to both the military student and the civilian reader, for it is a bit out of the common, and unlike the ordinary run of such things, and the author not infrequently, in a reminiscent sort of mood, writes attractively of the generals and colonels and regiments engaged in the campaign, and it gives one a glimpse of the enthusiasm that pervades the cavalry, and in fact the whole Army of the Potomac as it presses forward to the capture of its old and plucky enemy, the Army of Northern Virginia. Toward the close of his work he also takes up, incidentally, and discusses impartially the rivalries of the different corps as to their share in the final result, and gives the statements of their various champions for what they are worth, leaving the reader to draw his own conclusions. The discussion as to what General Lee intended to do with his army in case he escaped his pursuers, or whether he meant to surrender, when he answered General Grant's first note regarding the military status of his army, is hardly worth considering.

That he would have avoided surrendering, if possible, there is little doubt, and he only surrendered when compelled to choose between practical annihilation and surrender. The book is a medley, but all the same it is well worth reading and keeping for what it tells about those last glorious days for the Union cause, that saw the end of the Great Rebellion and the collapse of the Southern Confederacy.

To any old cavalryman of Sheridan's command the book will always be a pleasure, for it is certain to carry him back to his youthful campaigning days and as on some cold winter's night he sits in his library, snug in his easy chair, beneath his shaded lamp, and close to a blazing fire, book in hand, its perusal will reawaken dim memories of the past that, graybeard though he is, will surely quicken his pulse and send his thinning blood surging through his veins. Laying the volume aside and all unconsciously clasping his hands before him, he gazes intently into the glowing embers as his thoughts carry him far back to the tented field. Again he is young, virile, strong. Again he is in the ranks, and rides side by side and boot to boot with all his old-time comrades. Again he hears the trumpet call to trot. Again, in

fancy, he tightens the reins of his bridle as the squadron breaks into its increasing pace. Again the trumpet calls to gallop, and the whole command rise in their stirrups and drive home their spurs, while each soldier's sinewy hand closes upon his saber's hilt in a vice-like grip, and as together they swing their sabers over their heads, again he hears the call to "Charge!" as with a ringing cheer and mighty stride he, with his squadron, once more thunders down upon the cohorts of his country's foes.

G. A. F.

The Yellow War.*

A FEW months ago, the reading public must have noticed some very attractive articles relating to the war in the Far East, which appeared in the current press, signed "O."

The writer, evidently a close observer, with ample opportunity for seeing and a gifted power of description rarely equalled, has gathered a dozen and a half of his best sketches into a volume, entitled "The Yellow War," published by McClure & Phillips, of New York.

To those who have not seen the papers, "The Yellow War" will be a very entertaining method of getting an idea of what war means, and unless the writer of this review is vastly unlike his fellow men, those who have read the papers by "O." will want to read them again in this new and attractive form.

The chapters are isolated incidents, and form such excellent indices of Japanese character that it is a pity the author does not make them authentic history by giving the actual names of the participants.

H. O. S. H.

International Law.†

TO quote from the preface: "This compendium is written primarily for the use of students at the service and garrison schools. Like the use of syllabi at various colleges, it is intended to be used in connection with the original subject as a means of making quick reviews and final cramming for examinations."

In furtherance of such object it becomes a "quiz," or legitimate "pony," to use the well-known schoolboy terms.

It is in fact a carefully made syllabus-digest, of value to men past the "school" period.

This field of usefulness would be improved by a thorough index.

D. S.

Adjutants' Manual.‡

IN this little volume Captain Nixon gives us a very convenient compendium of the things a post adjutant must know. It is a time-saver and satisfier for the novice and a most acceptable and up-to-date assistant for the experienced.

W. J. G.

**The Yellow War.* By "O." McClure, Phillips & Co., New York, 1905.

†*Syllabus of Davis' International Law.* By C. A. Shane, Third U. S. Cavalry. Hudson-Kimberly Pub. Co., 1904. Kansas City, Mo.

‡*Adjutants' Manual.* By Courtland Nixon, Captain Second Infantry, U. S. A. John Wiley & Sons, New York; Chapman & Hall, Limited, London, 1905.

Arbitration.*

THIS little book adds to its "historical review," a statement of the steps so far had in furtherance of international arbitration, not yet recorded in history

It sums up (in its "conclusion," Chapter VIII.) in an optimistic spirit:

"We know too sadly, by the daily intelligence from the East, that universal peace has not yet come, but we may fondly hope that the era of Alexander, Cæsar and Napoleon has passed never to return; that the ambition of rulers and the rivalry of nations may henceforth lie in the paths of education, industry and commerce; and that The Hague court will long stand as a beacon light in the tempestuous sea of international politics, and its influence and efficiency grow with the advancing years."

It is reasonable to share in such humane and Christian hope; it is also reasonable to make preparation for its non-fulfillment.

D. S.

The Rifleman's Handbook.†

THE Rifleman's Handbook," by J. G. Ewing,‡ Assistant Inspector-General, Small Arms Practice, Delaware National Guard, is a compact little book on rifle shooting. It will be found of great value by anyone desiring to perfect himself in this art. At the end of each chapter will be found a summary which can be easily committed to memory. These summaries will be found of first importance, not alone to the novice, but to the experienced shot.

The "tables of wind allowance," on pages 48 and 49, give much information as to the use of the wind-gage on the Krag rifle. We recommend this book to the attention of both Regular and National Guard officers.

J. P. W.

Soldier's Handbook of Target Practice.‡

WE are indebted to the Franklin Hudson Publishing Company, of Kansas City, Mo., for a copy of "Soldier's Handbook of Target Practice." This book has placed in a condensed and convenient form all that there is in firing regulations, 1904, which will aid the soldier in perfecting his shooting.

We wish to call especial attention to the method of keeping a record of every shot fired during the target season. If the soldier is careful to record each shot, he can, at the end of the season, by a careful study of his record, see at what ranges he is weak, and what his error has been. By referring to this record during the next season, he has a better chance of overcoming the faults of the previous season.

J. P. W.

**Arbitration and The Hague Court.* By John W. Foster, President of the National Arbitration Conference. Houghton, Mifflin & Co., Boston, N. Y., 1904.

†*The Rifleman's Handbook for Military Riflemen.* By J. G. Ewing, A. I. G., Small Arms Practice, D. N. G. New York, Laffin & Rand Powder Co. 1904.

‡*Soldier's Handbook of Target Practice.* Being an Abridgment of the U. S. Army Firing Regulations for Small Arms. Kansas City, Franklin Hudson Pub. Co. 1904.

Estimating Distance.*

CAPTAIN BELL here relieves the company commander from the tedious calculations to determine the percentage of error in estimating distances in the tests now required before classification as sharpshooter marksman, first and second classman. A labor-saving volume which all captains will be glad to use.

W. J. G.

James Lawrence.

THE volume, entitled "James Lawrence," by Lieut.-Comdr. Albert Gleaves, United States Navy, with an introduction by Admiral Dewey, and published by G. P. Putnam's Sons, in the "American Men of Energy" series, puts in excellent and concise form the facts connected with the life and death of Captain Lawrence, who, like other heroes connected with the early history of our navy, the American people have come too near forgetting.

The history of the events and the facsimile reproductions of the correspondence leading to the sensational and extraordinary battle between the *Chesapeake* and the *Shannon* make the volume very interesting, and with its many references to other events and early actors in our history, necessary to any library or person aiming at, or desiring, complete historical knowledge of the navy.

H. O. S. H.

**Estimating Distance Tables.* By Captain Edwin Bell, Eighth U. S. Infantry. Franklin Hudson Pub. Co., Kansas City, Mo., 1904.



Our Exchanges.

Military.

- Aldershot Military Society Papers.*
Journal U. S. Cavalry Association.—(April).—
Journal Association Military Surgeons.—(March–April–May).
Journal Royal United Service Institution.—(Feb., Mar., April, May).
Journal U. S. Artillery.—(March–April). 1905.
Journal United Service Institution.—(Jan.)
Journal U. S. Infantry Association.—(April).
Proceedings Royal Artillery Institution.—(Feb., Mar., April, May).
Revue de l' Armée Belge.—(Nov.–Dec.–Jan.–Feb.).
Royal Engineers' Journal.—(April–May).
Revue d' Artillerie.—(Feb.–March–April).
Revue Militaire.—(Feb.–March–April–May).
United Service, New York.—(March–April–May).
United Service Magazine, London.—(March–April–May).
Revue du Cercle Militaire; to date.
Rivista di Artiglieria e Genio; to date.
La Belgique Militaire; to date.
La Revue Technique; to date.
The Army and Navy Journal; regular issues, to date.
United Service Gazette; to date.

Naval.

- Proceedings U. S. Naval Institute.*
Boletin del Centro Naval; to date.
Rivista Maritima; to date.

Miscellaneous.

- Annales de la Sociedad Cientifica Argentina;* to date.
Bulletin American Geographical Society; to date.
Current Literature; to date.
Journal of the Western Society of Engineers; to date.
Political Science Quarterly; to date.
Proceedings of the American Society of Civil Engineers; to date.
Review of Reviews; to date.
The Scientific American; to date.
The Popular Science Monthly; to date.
The Seventh Regiment Gazette; to date.
The Medical Record; to date.
The Century Magazine; to date.

Library and Review.

- In Memoriam Henry Warner Slocum, 1826-1894.* Published by Authority of the State of New York, under the Supervision of the New York Monuments Commission. (Albany) J. B. Lyon Company, 1904.
- Dictionary of Battles, from the Earliest Date to the Present Time.* By Thomas Benfield Harbottle. (New York) E. P. Dutton & Co. 1905.
- Annual Report of the State Historian, New York.* (Albany, N. Y.) April 17, 1903.
- Port Arthur. A Monster Heroism.* By Richard Barry. (New York) Moffat, Yard & Co., 1905.
- The Centennial of the U. S. Military Academy at West Point, N. Y., 1802-1902.* 2 Vols. (Washington) Government Printing Office, 1904.
- Russian Provisional Fortifications, from "Ocasional Papers Engineers' School, U. S. A."* Trans. by Lieuts. E. J. Dent and Geo. R. Spalding, Corps of Engineers, U. S. A. (Washington Barracks, D. C.) 1905.
- Military Landscape Sketching.* Trans. from the Journal des Sciences Militaires, by Capt. W. V. Judson, Corps of Engineers, U. S. A.
- Memorandum Relative to the General Officers Appointed by the President in the Armies of the Confederate States, 1861-1865.* Compiled from Official Records, 1905.
- Edwin McMasters Stanton, The Autocrat of Rebellion, Emancipation and Reconstruction.* By Frank Abial Flower. (A. Krow, Ohio) The Saalfield Publishing Co., (New York and Chicago), 1905.
- History of the Third Pennsylvania Cavalry, 1861-1865.* Compiled by the Regimental History Committee of the Third Cavalry Association. (Philadelphia) Franklin Printing Co., 1905.
- Biographical Sketches of Distinguished Officers of the Army and Navy.* (New York) L. R. Hamersly, 1905.
- Problems in Maneuvers, with Solutions for Officers of all Arms.* By Major J. H. V. Crowe, R. A. (New York) The Macmillan Co., 1905.

Editor's Bulletin.

Corres- ponding Members of Council.

AT a stated meeting of the Executive Council, June 14, 1905, a number of gentlemen (see page 203), who had signified their willingness to serve as Corresponding Members of Council, were duly elected for the term ending January, 1907.

These officers will represent the Institution in the vicinity of their respective stations and will cheerfully furnish information relative to membership, and the publication of papers in the JOURNAL.

Field Opera- tions in the Far East.

In this issue of the JOURNAL appears the second of a series of careful studies of the Russo-Japanese operations in Manchuria, by a distinguished officer of the Corps of Engineers. This paper is illustrated by a number of maps and plans of battle, compiled from the most authentic sources, and upon which the author has drawn the positions of the opposing forces at certain stages of the battles described.

Change of Quarters.

The Library, Museum and Council Room of the Institution, with their contents will, on or before September 1, 1905, be established in the building within the grounds of the New York Arsenal, on Governor's Island, N. Y. H., known as "The Clock-tower Building." The increased space available will permit the exhibition in the Museum of many relics and trophies, which have long been in storage.

Clerical Reform.

Colonel Heistand's strong plea for a reform in the clerical methods of accounting for property and funds prescribed by law and regulations for the Army (contained in the May JOURNAL, entitled "Accountability for Public Funds and Property") receives unexpected and powerful support in the President's letter of instruction.

to the Board of Experts recently appointed to revise the existing system for all government accounts, as note the following extract:

**Account-
ability
for Public
Property.**

"In all branches of the government there is a tendency greatly to increase unnecessary and largely perfunctory letter writing. In the Army and Navy the increase of paper work is a serious menace to the efficiency of fighting officers, who are often required by bureaucrats to spend time in making reports which they should spend in increasing the efficiency of the battleships or regiments under them."

We shall be glad to publish the comments of officers of experience on this subject while it is under official consideration.





Journal
of the
Military
Service
Institution
1878
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1905

Governor's
Island
N. Y. H.

THE JOURNAL

SEPTEMBER-OCTOBER, 1905



SOME of the papers approved for early publication in this JOURNAL.

- I. "THE OPERATION AND MAINTENANCE OF A RAILROAD IN THE THEATER OF WAR."—By Capt. W. D. Connor, Corps of Engineers.
- II. "IMPROVEMENT OF HORSES FOR MILITARY PURPOSES."—By Lieut.-Col. E. E. Dravo, Subsistence Department.
- III. "THE TRAINING AND PERSONNEL OF VOLUNTEER TROOPS."—By Capt. G. D. Snyder (late), N. G. P.
- IV. "ORGANIZATION AND FORMATION OF INFANTRY TROOPS MOST SUITED TO PRESENT BATTLE CONDITIONS."—By Lieut. G. M. Brooke, Artillery Corps.
- V. "SOLDIERING IN THE OLD SEVENTH."—By P. S. Leland.
- VI. "REMARKS ON MANEUVERS; MAINLY FOR THE USE OF OFFICERS OF INFANTRY."—By Capt. U. G. McAlexander, Thirteenth Infantry.
- VII. "OBSERVATIONS ON MILITARY SERVICE IN EUROPE—1904-5."—By Captain J. A. Ryan, Adjutant Fifteenth Cavalry.
- VIII. "THE NON-COMMISSIONED OFFICERS, THEIR EFFICIENCY AN ESSENTIAL FACTOR IN OUR ARMY."—By Lieut. G. A. Wieser, Fifteenth Infantry.
- IX. "TYPES AND TRADITIONS OF THE OLD ARMY." In addition to papers under this head already recorded, the Editor is permitted to make some extracts from the unpublished Autobiographical Notes of the late Gen. Zenas R. Bliss, U. S. A., of his military service 1855-1882.

THE PUBLICATION COMMITTEE invites contributions of original papers, translations and comments upon current topics. Attention is called to "Gold Medal," "Seaman," "Short Paper," and "Santiago" prizes described elsewhere.

The Military Service Institution of the United States.

NOTICE TO MEMBERS.

Amendments to the Constitution.

NOTICE TO MEMBERS.—At a meeting of the Executive Council of the Military Service Institution, held June 14, 1905, the following amendments to the Constitution were proposed and are here submitted for the action of Members of the Institution. In lieu of a more formal ballot each member entitled to vote is requested to note his action on a postal card thus:

ON AMENDMENTS TO ARTICLES III, IV, V and IX CONSTITUTION M. S. I.	
I vote..	III *
	IV *
	V *
	IX *
(Signature)	
* "Yes" or "No"	

and return it as early as practicable, to "*The Secretary, M. S. I., Governor's Island, N. Y. H.,*" for the action of a General Meeting to be held on October 11, 1905, at 3 P. M.

PROPOSED AMENDMENTS.†

(To read as follows.)

ART. III. LOCATION.

The rooms or headquarters shall be *located within the geographical limits* of the City and County of New York.

ART. IV. MEMBERSHIP.

Sec. 4. All persons not mentioned in the preceding sections, of honorable record and good standing, shall be eligible to Associate Membership

† The words in italics are new.

by a confirmative vote of two-thirds of the members of the Executive Council present at any meeting. Associate Members shall be entitled to all the benefits of the Institution, including a share in its public discussions; but no Associate Member shall be entitled to vote nor be eligible to office, *except as hereinafter provided.*

Sec. 5. When any member shall have been dismissed from the army, navy or marine corps by order of the President, by the sentence of a court martial, or shall have been convicted in a civil court of a felony, his membership shall be forfeited and his name dropped from the rolls of the Institution.

Any Associate Member who shall be dismissed from the Volunteer Service of the United States or from the Militia of any State by sentence of a Court Martial or shall be convicted of a felony by the final sentence of any court of competent jurisdiction shall forthwith cease to be an Associate Member of this Institution.

ART. V. GOVERNMENT.

Sec. 3 The President and Executive Council shall be elected by the Members of the Institution, at a General Meeting to be held biennially, on the second Wednesday in January, or as soon thereafter as practicable. *One-third* of the Council shall go out biennially, by rotation, but may be eligible for re-election.

Sec. 5. Five members of the Council to be appointed by the Chairman shall constitute a Committee on Publication and Essays.

It shall be the duty of that Committee to examine all papers submitted to it (by the Council) and report the disposition which in its judgment should be made of them and *to authorize* for publication the essays which the Committee may deem most suitable for that purpose.

ART. IX. CHANGES IN THE CONSTITUTION.

Changes may be made in the Constitution at any General Meeting by an affirmative vote of two-thirds of the members of the Institution voting: Provided that due notice of said meeting shall have been mailed to each member and posted in the rooms of the Institution at least *ninety* (90) days prior to said meeting; and provided further, that absent members may vote by proxy.

T. F. RODENBOUGH,
Secretary.

The Military Service Institution.

HONORARY MEMBERS.

THE PRESIDENT OF THE UNITED STATES.

Ex-President GROVER CLEVELAND, LL.D.

The SECRETARY OF WAR. The LIEUTENANT-GENERAL.

OFFICERS AND COUNCIL.

President.

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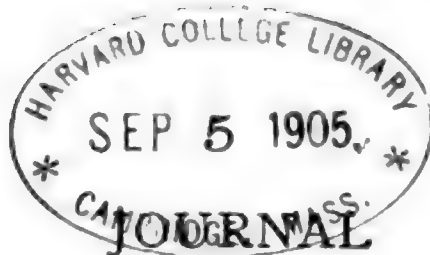
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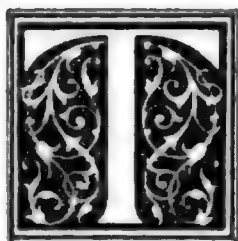
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Vol. XXXVII. SEPTEMBER-OCTOBER, 1905. No. CXXXVII.

OBSERVATIONS ON MILITARY SERVICE IN EUROPE.

BY CAPTAIN J. A. RYAN, ADJUTANT,
FIFTEENTH CAVALRY.*



HE MILITARY SECRETARY, U. S. ARMY.

SIR: I have the honor to report that while on leave of absence in Europe, from December 28, 1904, till April 20, 1905, I visited Ireland, England, France, Belgium, Germany, Austria and Italy. I took occasion to observe the cavalry of all these countries and visited the battle-fields of Waterloo, Königgrätz, Austerlitz, Aspern and Wagram, as well as the Island of Lobau and the point of crossing the Danube to that island.

My opportunities for observing the cavalry at drill were limited, due to the time of year, which confined them to the barrack yard and to the careful scrutiny exercised in all Continental armies to exclude strangers. I did, however, have a good chance to observe both the English and the German cavalry at close range and I shall refer only to those points wherein I deem their work better than our own.

ENGLISH CAVALRY.

Horse Guards.—These regiments are composed of picked men and horses. They present a very striking appearance in

*While on leave of absence from December 28, 1904, to April 20, 1905. Published by permission of the Second Division General Staff.

their showy uniforms, but it is difficult to believe that men could ever fight, as they did years ago, in such a dress. The set-up of the men was very good, a remark that applies to most British soldiers.

Thirteenth Hussars.—This regiment is stationed at Hounslow, about twelve miles from London. They have a small riding hall in which the recruit horses and men are trained. A drill was in progress the day I was there. A squad of twelve men, drilled by a sergeant, under the supervision of a riding-master. Their horses were new, unassigned, and had been under instruction for three months. They were splendid types of a cavalry horse, about 15-1, good barrels, fine heads and very tractable, due, no doubt, to the careful handling by men who knew how to train horses to the work of cavalry.

One very noticeable fact here, as well as on the Continent, was that every horse held his head properly, showing a familiarity with bending lessons, and they answered the hand of the rider at once, but with ease and willingness. There was no throwing up of the head or pulling on the bit. These horses, after being walked, trotted and galloped, were put over brush hurdles about three and a half ($3\frac{1}{2}$) feet high, which they took without any effort. I was informed that they receive new horses every year at a fixed time, each squadron having horses in excess of the number of men and these new horses are trained perfectly by experienced riders before they are assigned for regular squadron work. When the training of these horses is completed, a board of officers examines them, and if satisfactory, they are passed to the squadron and riders assigned to them.

The type of horse at Hounslow in this excellent cavalry regiment may have been better than the average, I cannot tell, but they were the best squadron horses I saw in Europe. The officers' horses were equally excellent, each officer possessed at least one Irish hunter and some possessed two or more. The Irish hunter is, without doubt, the most suitable horse for cross-country work that can be found.

The horse equipments in this regiment are kept on racks attached to the heel-post and high enough to be out of the way. Steel bits and curb chains are preferred to nickel and they are kept always in serviceable condition. The reason is that after each drill the men, after unsaddling, throw the blanket over their horses to prevent colds. The equipments are then

cleaned at once, after which the blankets are taken off and the horses are groomed.

In all the stables of Europe the peculiar custom prevails of leaving the bedding down all the time. The droppings are collected by stable orderlies, but the straw is not removed at all; new straw being put on over the old bedding, until a mat of straw is formed from eight to twelve inches thick. It is soft and spongy and the clean straw, spread on top daily, prevents staining of the coat by urinary discharge.

They have a large stable for sick horses. This is filled with box stalls and has plenty of light, with a warm southern exposure. All sick horses are at once removed from the squadron corrals and assigned to the sick line, as it is called, the hospital for horses as it were. Here the horses are under the direct charge of the veterinary, who is assisted by enlisted men trained to care for sick horses. I deem this a good method, for it isolates the sick at once and prevents the spread of contagious diseases. It makes the veterinarian alone responsible for the care and treatment during illness, and puts the horses under charge of a horse nurse, whose business it is to do nothing but assist the horses to get well. Besides, the veterinary has all the appliances at hand that may be needed for proper treatment.

The officers discussed the question of the "*arme blanche*" and while in this regiment both the lance and saber are carried, none seemed to regard either as an effective weapon in the warfare of the present day. Their saber is a good strong one, almost straight. It is lighter than the one carried by the enlisted men of the United States Army and has better protection for the hand, but both weapons are doomed to pass out of use in the near future and give way to automatic revolvers and carbines, used mounted as well as dismounted.

I examined the mess arrangements and found them good. One feature was the variety in the cooking of meats at the same meal. The captain explained that it was done to give men variety at the meal. The bill of fare the day I visited them had on it roast mutton, mutton chops and Irish stew with vegetables, bread, coffee, etc.

The canteen feature in the English Army is a very satisfactory one to the enlisted man and one that enables him to get a lunch and a glass of beer for three or fourpence. Beer is sold freely at threepence a quart, with no ill effects on the

discipline of the garrison. In the room where beer was sold were tables, chairs and in one corner a stage with a piano. Every evening there is music and singing there by the soldiers. It is their club. It keeps them from the low drinking dives and gambling resorts, with their attendant evils, and supplies them with recreation, a very necessary tonic in a soldier's life.

The canteens in the English Army are let by contract, just as we let contracts to supply oats, hay or other supplies. The contractors are men of large capital, who make a business of running canteens for the army wherever the British soldier serves. A board of officers regulates it, but the managers, clerks and cooks are civilians. From the prices charged and the articles furnished soldiers, it appears to be a very satisfactory and practical solution of the canteen business.

GERMAN CAVALRY.

I visited a regiment of Uhlans, stationed on Prince William Street, Berlin, where they were drilling recruits of less than one year's service. The first thing noticeable was the uniformity in the height, weight and build of these men. Platoons from two squadrons were drilling in a rectangular inclosure, made by corrals on three sides and with a fence on the fourth. They were mounted, armed with the lance and they went through the drill of that arm with their horses at a trot, each horse keeping a distance of two horses' lengths from the one ahead in column, which enabled them to walk, trot and canter forward and march backward without once interfering with each other.

Their horses, while not so good as the English horse, were well-built, serviceable-weight carriers, heavier, as a rule, than the American cavalry horse and thoroughly trained. Each horse waited for the signal from his own rider, who always felt the bit lightly but enough to communicate instantly the desired direction. Several tests were made while I watched them, such as leaving platoon in line. One trooper would ride to the front ten yards, go by the right flank to the right, then by right flank to the rear, right flank again till in rear of his place and by the right flank again, moving up into the place he had left without disturbing a horse or a man. The whole secret of it is the trained horse. The recruit is put on the trained horse and soon becomes proficient in his drill. I did not see a horse bolt or get out of ranks during any of the drill. After drill the same

rule holds as in the English cavalry, horses were unsaddled, blanketed, equipments cleaned and horses groomed, a custom that certainly seems to be practical and one that brings good results.

The German soldier rides with a short stirrup and carries his feet well, almost parallel to the horse's sides. His leg work is excellent; he uses the spur intelligently and uses his legs constantly in directing his horse. He, too, shows a training in horsemanship that is the result of hard, patient drill. The Germans jump their horses more than we do. In this small drill ground there were four jumps; one a brick hurdle about three feet, one an imitation brick wall about the same height and the third jump was a shallow ditch, while the fourth consisted of a pile of logs held together by strap iron on the ends.

I visited their stables and they have the same objectionable custom, common to all European armies, of never removing the straw from under a horse, for drying or cleaning. The stables are well built and roomy. They take good care of their horses, for, after drill, they groom or dry them off with straw at once, and if it is chilly they throw a blanket over them. The blanket used on the horse is washed regularly, not like ours, left in one fold from month to month. Our blankets should be washed every week and mended, if torn; we are behind them in this regard. Their blankets last twelve years with care, ours scarcely twelve months.

Their attention to their steel bits shows another matter for our consideration. Right after the bit leaves the horse's mouth it is cleaned and dried; there is no leaving it till inspection day. The equipments were placed on saddle racks, just in rear of the horses, where they can always be inspected. They have no weekly inspection but are inspected whenever the captain or the colonel desires it.

The German overcoat worn by the enlisted men is a good, serviceable article. Our new overcoat misses the point made by the German, in not being fuller in the back, with a plait folded smoothly to take up the surplus cloth and belted to hold it in position. The object being that the coat can be used as a blanket at night. The German soldier wears a small, round, visorless cap, resembling a polo cap, for drill and stable only. It is cheap, neat and serviceable, an improvement on the campaign hat for work in garrison.

I visited their equipment rooms and this explains the neat appearance of the German soldier when seen on the street.

The best uniform is kept in the equipment room, always ready for parade or other necessity. If a soldier gets a pass he goes to the non-commissioned officer in charge of the equipment room, gets his clothes and takes them back on his return. Thus nothing but the poorer working clothes of the soldier are kept in his locker and the sleeping rooms of the barracks are not crowded with clothes closets. The barracks are substantial, but not so well equipped as our own.

The field music of the German infantry consisted of drums and fifes, the fifers also carry a bugle to sound calls. This is the most desirable kind of field music, compared with which our own, of bugles only, is quite secondary. The fife and drum are an inspiration to all soldiers, and especially on a long march this quick, shrill, sharp kind of music, rouses men to get in step and revives their drooping spirits as nothing else can. Music has its effect on the human heart and its influence should not be ignored.

I shall now turn my attention to the officers' riding-schools of France, Germany and Austria. These I visited and inspected thoroughly and regret that my arrival at Rome was just too late to visit the Italian school, whose term had been completed and the school closed when I reached Italy.

OFFICERS' RIDING-SCHOOLS.

French School at Saumur.—The excellent article that appeared in the *Journal of the U. S. Cavalry Association*, of January, 1903, by Captain Mott, as well as the one by Captain Parker, gives all the detailed information obtainable. I will confine myself to what I saw that particularly merited attention.

The completeness of the institution at Saumur does not dawn upon the casual visitor. It is only after he has passed through the riding halls, the stables and all the shops that assist in making perfect riding a possibility and a pleasure, that one can appreciate this great finishing school for mounted officers. There are four riding halls, smaller than our West Point hall, but for a reason. They are large enough for twenty-four men and a greater number under one instructor is more than he can attend to with justice to himself and the students. The halls have large mirrors at the ends, which allow the rider to see his position on the horse four times in one circuit; naturally he will correct any fault in his appearance.

The instructors in France are mounted as well as the students, a custom that prevails there only. In England, Germany and Austria, the instructor acts like a ringmaster, is dismounted, and usually in the center of the hall. He is not sparing in his criticism of students. These officers seem to have no other object in life than good horsemanship. They talk it, think it, live it, day after day, and there is no shamming or avoiding their work, they actually ride many hours a day and have a different horse for every hour.

The hall work seen by me was especially good. At my request they allowed me to see just the every-day work, without any special riding such as visitors are shown. Their work in passaging, turning, passing from trot to gallop and back, changing step at command and jumping, was excellent. All the horses I saw in the hall had had at least six months' instruction under the student officers riding them and they exhibited various degrees of proficiency.

It is erroneous to believe that at Saumur every student is an excellent horseman. They may become such before graduation, but even on their best jumpers I could observe some whose position during a jump was far from correct and some, through accident or nervousness, gave the horse the jerk on landing, so noticeable in a recruit on taking his first high hurdle. Their leg work was excellent; they do so much of it in the hall instruction that when you examine their position critically you notice that the position of the rider's feet is not in harmony with our idea. The feet were seldom parallel, the toes were generally turned out. Their seat was firm and still graceful on all their saddles.

There were three kinds of saddles used that I observed, the regulation saddle, the English saddle and the Louis XIV saddle, so called because it has come down to the French from his time. France, from the time of that great king, has paid great attention to horse training and riding and this saddle has, I believe, an important place in this instruction. It looks like an English saddle, with high rolls over pommel and cantle, so that the rider, when seated, assumes at once the correct position. The rolls are not absolutely rigid; they are soft to the touch like a well-made cushion but they do hold the leg from the thigh to the knee in the correct position and give the rider a firm hold with his thighs. It seems to be an excellent thing for beginners. It is used for the buckers and for the highly-

trained horses that execute the "Spanish Step." Whether with or without the stirrup, it is said to be a most comfortable, easy seat on the horse.

The English saddle is used in work out of doors, in cross-country riding and the regulation saddle is used in training for squadron work. Each officer, during his year's work, trains a new horse and, at the expiration of his school year, he has the privilege of buying this horse at the price paid for him by the Government. Most officers, I am told, buy their horses and take them back to the regiment. This has a good effect, in that it places in each regiment a standard that others will try to reach and thus all its officers will strive to be well mounted.

In one hall I visited, a class of student officers were receiving instructions from one of the riding instructors. They rode well and did some good jumping. Their hurdles consisted of two uprights of triangular shape, with a moveable bar covered with straw rope or matting to protect the horses' knees should they strike it. There were also brush hurdles and hurdles the height of which could be increased up to five feet by means of a movable bar. In observing these horses it was apparent to me that the horse was better trained than the rider. It looked as though the horse was just taught to jump without the man till he could jump well, then the man was put on, for the horse was sometimes jerked by the rider after the hurdle was cleared. On the whole, it was very creditable; it showed careful instruction, and from the lively manner they rode and jumped their horses one hour's work was enough, for their horses were usually quite warmed up at the end of the lesson.

At a signal that the drill was over, the stable men entered, carefully blanketed the horses and led them away to be groomed and to have their equipments cleaned. All metal parts are steel; the saddles showed great care and bits and curb-chains shone like silver. At the conclusion of this drill I visited another hall, where there was a class of six officers and eight non-commissioned officers riding buckers, using the Louis XIV saddle. They rode about individually, jumping at everything in sight. They would stop short from a trot, rise as if to rear, come down, break into a trot at once, then stop and kick to the rear when struck with the whip. They were strong buckers and the riders were well jarred by their antics. It showed good riding, for no stirrups were used.

After the regular school work in the hall was completed, I

saw an exhibition of horsemanship given by the riding-school instructors, mounted on thoroughbreds, and using the Louis XIV saddle, one major, four captains and eight lieutenants. The horses were put through the various gaits, and they passaged around the hall, after which all began the "Spanish Step" and kept it up for some time.

I must remark that the stables were very good and an inspection of the horses showed them well groomed and well cared for.

Besides having a good horse there are two other requisites to good riding. First, the horse must be properly shod, and next, he must have a strong saddle that fits his back and fits the rider. This is provided for at Saumur, in having a school of instruction for farriers, which is attended by one man from each squadron in the service, and a saddle manufactory that supplies all the regulation saddles to the army. They are not finished but are sent to the regiment where they are completed by the saddlers of the various squadrons.

The school of instruction for farriers is under the direction of a major of cavalry. He first took me to a large room that contained samples of all the horse shoes used in the world, from the time of the Romans to the present day, a very suitable exhibit for such a school. He had plaster casts of hoofs shod with the regulation shoes and many hoofs cleaned, shod and unshod, to show the students by actual observation the thickness of the wall of the hoof, the directions of the nails to hold the shoe, the frog, sole, etc.

In the workshops, a non-commissioned officer stood at each anvil directing the student, and another superintended the horses being shod with the shoes fitted at the anvil. All shoes used at Saumur are made by hand at the factory by the farrier students, and when their six months' course is completed, they must know everything connected with the proper shoeing of the normal hoof. I also saw the different kinds of shoes intended to correct deformities and injuries.

In the saddle factory I watched the making of the saddle, from the sawing out of the tree to the covering with leather, all done by hand by the saddlers under instruction. When they complete their course they, too, return to their squadron with a knowledge of saddlery that can be gained in no other way. In both these schools of instruction I was struck with the earnestness and real interest displayed by the workmen.

They went at it as if they were in love with their work. It was not a drill for them, it was a trade; and after leaving the army, these men go back to their homes, and thus in France at any little country town you can find a blacksmith that can shoe your horse and shoe him properly. The influence of Saumur is thus spread throughout the nation to the benefit of both man and his most useful animal, the horse.

The veterinary school is another feature of Saumur; their instruction is by lecture, and after the examinations at the end of the year, the one taking the highest standing has his name inscribed on the roll of honor in the lecture-room. Connected with this veterinary school is a small botanical garden where all kinds of food grasses are grown as well as herbs used in the treatment of sick horses, an excellent and practical idea, for nothing can be better for sick horses than nature's own remedies.

The fencing school is on the order of the West Point school, but I believe they do more of it here. The school for military telegraphers is the same as our signal-corps school except that it is the cavalry branch here. Our signal corps perform all those duties, and I cannot see the advantage of burdening the cavalry with this kind of work. In the cavalry-advance guard the information obtained will be brought to the rear by courier and transmitted by the signal detachment that should accompany it.

Saumur is inspiring to a cavalryman; he feels he is in the midst of horse soldiers and such an institution must infuse great spirit into cavalry and artillery. The work done there is real, the student is not tied down to books, he does his work in the hall and out of doors and the only study for him is his horse and himself.

German Riding-School at Hanover, Germany.—Hanover, the seat of the great German officers' riding institute, is on the main line of railroad between Cologne and Berlin. I had letters to several officers at Berlin, but none to those at Hanover, and not wishing to retrace my steps I stopped at Hanover, trusting to American politeness and ingenuity to gain admission to this school. I first sought the American consul, Mr. White, a very bright young man, and found he had many friends among the officers there. I made myself known and he very kindly arranged for me to visit the school with him next morning.

Through the courtesy of Captain Westfeld, the head of this

riding-school, I first visited the hall in which he gave instructions. His work was mostly in *haute école* teaching the "Spanish Step." He exhibited several highly trained horses and it was remarkable to observe the change in these horses the moment they were mounted by their riders.

The horses, as they were led in, did not impress one as being such fine animals; they were well formed, had strong legs, but heads were apparently heavy on some, yet the instant the rider was in the saddle the change was marvelous. From the mild-looking family riding horse with saddle he became the prancing steed of the warrior, the eyes brightened, the springy step in *haute école* riding lifted horse and rider as if on wings, and as the feet touched the ground it seemed as if they pushed the earth from them, as though they spurned to remain long in contact with it. It was beautiful; no punishment, no effort, these highly-trained animals knew their work.

All general officers, I am told, get their horses from this school, and they must present a fine appearance on review. Upon closer examination of these horses I observed the wonderful development of the leg and back muscles. This is done by a regular setting-up exercise taught the horse, and which was shown me by the polite captain. He mounted his horse, and at a signal the horse first raised one front and the diagonally opposite hind leg, then put them down and raised the other front and hind legs as fast as a horse would trot at a slow trot. This was new to me, it was the gymnastics of horse training and it brought into action all the muscles used by the horse while in motion. Notwithstanding all this high-school training these horses did not lose their simpler gaits, but took them easily and gracefully at the will of the rider.

A class of student officers, fourteen in number, then entered for their lesson of one hour. They mounted and rode at will, jumping hurdles, trotting, passaging, changing step and performing all the difficult feats in horsemanship. Their work was quite like the French school, and the earnest way in which they went about it showed the deep interest they took. Other halls were also filled with student officers working with new horses, some of which were Irish hunters. This horse seemed to be preferred all over Europe for cross-country work especially.

The riding halls and stables at Hanover are built around a rectangle and the enclosure thus formed is used as an outdoor

riding-school. Sand covers the surface of this exercise ground to a depth of about six inches, making a soft footing for the horses. In this school were twenty-four officers from the various regiments, all superbly mounted and riding at various gaits. No instructor was present, but all were at work taking jumps, hurdles and ditches as if they liked it. It was raining slightly the morning I was there, but that did not deter these Germans in their fine uniforms; they splashed through muddy places riding at their jumps, slipping now and then, but always returning to it if unsuccessful the first time.

It was admirable to see the enthusiasm shown by these young officers in their work. It was apparent that some were not good horsemen, but they were cavalrymen at heart and worked with a persistency that would make them good riders in the end.

An examination of their stables and saddlery showed the same careful attention to stable management and equipments, so noticeable in the French school. The German officers at this school do a great deal of cross-country work, hunting the wild boar. These animals are bred for this sport and set free at a certain point, where the dogs can begin the chase. I saw the kennels where the packs were kept, the dogs were like the fox-hound used in Virginia, were nicely housed and in good running trim. The stag is also hunted here in a similar manner. These student officers do nothing but ride; they have a recitation one day in the week in tactics, but that is all. This seems to be a good plan, as it puts all the man's thought on the *main object* of this school, viz.: the "art of riding the horse."

Neither the German nor the French are natural riders; they are not as a class brought up from their youth like the English and many Americans, used to riding from childhood, but they have recognized their deficiency and have both made great strides in overcoming it. Such schools as the German school at Hanover must produce a class of riders second to none in the world. This school keeps alive and disseminates the knowledge of equestrianism that would otherwise be lost among a people who, as a rule, have come to employ other means of transportation beside the saddle-horse.

Austrian Cavalry School, Vienna.—From Hanover I went to Berlin; I have already described the German cavalry seen there. The next school visited was the Austrian officers' riding-school at Vienna.

The officers attending the school are quartered in what was formerly a Catholic convent; it is a fine, substantial building, but it was evident that it was intended for other purposes.

An officer met me at the school at 8.00 A. M. and we proceeded at once to the riding halls. There are three halls here, none of them as large as that at West Point, nor do I believe large halls are desirable. Smaller halls, it is true, limit the number of men in the class, but it is not possible for thorough instruction to be given the riders when a class exceeds twelve or fourteen members.

In the first hall there were fourteen young officers riding new horses that were being trained. They were riding English saddles and used the snaffle-bit only. They rode about at various gaits without interference, the instructor criticizing them freely. The riding-master was dismounted and stood about the center of the hall, carefully watching each horse and rider as he passed a certain point. Sometimes, if a horse was not acting to suit him, he would dismount the officer, mount himself, and show the student how it should be done properly.

In the second hall visited, the instructor was giving commands in a moderate tone of voice; the horses in this hall were better trained and took to their work beautifully. They passaged, changed step at a walk, trot and canter, and while all obeyed the commands of the instructor, each horse was working individually, under the signal of his rider, and would leave the column, trot out, turn around, go forward and go backward, without any hesitancy. It was truly a fine exhibition of a perfectly trained animal, that among so many horses going in different directions each horse attended to his own work, was not influenced by what the others did, but waited for and acted upon the indications of his rider.

These officers ride five hours a day and as many horses, for after one hour's work of this kind a horse needs rest and rubbing down. The instructors are on duty for the same length of time daily.

The third hall was similar to the first and contained fourteen student officers. The major-general commanding, a man of about forty-five, was in this hall riding a young horse which he was training. He moved among his lieutenants, devoting all his attention to his work of training that horse, and had he not been pointed out to me, I would not have known that he was not receiving instruction the same as the other officers. At

the conclusion of this drill he came to the gallery; I was introduced to him. He kindly welcomed me to Vienna and to the riding-school, and made some kind remarks about American officers.

After visiting the riding halls I went through the stables and saw with what excellent horses this school is provided. Most of them are bred at the Government studs, and an officer has the privilege of buying one from his squadron, if he so desires, on leaving the school. These horses are carefully attended, and one black stallion, valued at \$1,000, a fine animal showing much life, was as tractable as a kitten. The groom moved around him in his work with perfect ease and yet, to see that animal in his box stall, one would conclude that he was vicious. The grooms are all old soldiers who receive extra pay from the officers for their work.

Saddles and bridles are kept beautifully; the horses, blanketed as soon as the exercise in the hall is over, are led about at a walk until cool, when they are taken to the stables and groomed. The Austrian stables are very well built, well lighted and well ventilated; they also keep a horse knee deep in straw all the time. Their manner of tying a horse while being groomed, with a rein from each side of the halter and sometimes one from the nose-band, is very good. Their halters fit better than ours. The grooms, on bringing the horses to the riding halls, were in neat uniform and were under the charge of a non-commissioned officer, armed with a saber. From May till September, every year, the officers at the school have wild boar and stag hunting.

While the Irish hunter is seen here, as he is all over Europe, and for endurance, weight-carrying and jumping required in cross-country work cannot be excelled, the Austrians have a horse which for all-around cavalry work seems ideal. He is known as the Hungarian horse. He is a well-made, graceful animal, average height about sixteen hands. The Hungarian is a horseman from birth, and it is from Hungary that both the best horses and riders of the Austrian cavalry come.

The student class in Austria, at the end of a year, are examined and arranged according to their riding. The students of the lower half are returned to their regiments, while the other half is retained at the school for a second year of instruction. These officers on returning to their regiments are made regimental riding instructors. At this school I noticed one

officer from the Spanish Army. At the German riding-school I saw an officer from Sweden. A course at any of these schools would be regarded as a reward by an officer of any army.

Italy.—My arrival in Italy was too late to observe the cavalry officers' school, where the daring feats of horsemanship, such as climbing and descending almost straight walls, are taught.

BATTLE-FIELDS

My visits to the battle-fields mentioned above were most interesting and instructive. Possessing maps showing the positions of the different armies, the artillery positions in the line of battle, the reserves as well as the line of attack, the point of rupture and the flanks turned, I was able to take in the plans of both armies and to see the advantage of the one and the defects of the other. Visiting decisive battle-fields is a most satisfactory and beneficial occupation for the student of the military art. Plans on paper, even when the contour lines show the conformation of the terrain, are never as clear nor so convincing as when one is on the ground. A knowledge of ground is of great importance in battle, and the past masters in the art of war were experts. It is said that no man ever studied the enemy's position and his own, as to the ground, as did the great Napoleon.

UNIFORM. OFFICERS.

Officers in all Continental armies are seen daily in the cities in uniform, and their dress and appearance is a subject of favorable comment by all. One reason for their fine appearance is that it is customary for officers to reserve one complete outfit, the best, for street purposes, and when they appear they give the impression that they have just donned a new uniform. Another reason is that, there being so many officers in European cities, military tailoring is made a specialty and catered to by many tailoring establishments. There does not appear to be very much difference in the cut and make of the garments in the different armies, it is the cloth, its color and the head-dress that make them appear different. Any articles of uniform, both for officers and enlisted men, are quite similar to our own. I shall merely touch on those that seem to be preferable to ours.

Officer's Cape.—This garment, used in the German, Austrian and Italian armies, consists of a long full cape, reaching almost to the shoe top and held at the neck by a metal clasp. It is worn dismounted, and in cold weather completely envelopes the wearer, yet is so loose and free about the legs as not to impede walking. It has another advantage in the field in that it serves as an excellent protection during the day in sudden changes of weather and at night serves well as a blanket.

Cap.—The Germans, English and Russians wear a cap similar to our own, but with a slight modification of visor and the bell of the crown. The Italian officer possesses the neatest and most soldierly looking cap in Europe. In shape it resembles the cap worn by the Union Army during the Civil War, except that the crown is held in shape and up off the head; the top of the cap is slightly smaller than the crown and the visor droops well to the front, giving excellent protection to the eyes.

The band of the cap indicated the rank of the wearer at once and could be distinguished easily when the observer, was within fifty yards of him. This seems to be most desirable, as the collar ornament, the sleeve ornament and shoulder-strap are often covered up when an officer on horseback wears an overcoat, but by his cap his rank is proclaimed at all times.

Riding Boots.—In observing students at the various riding-schools, the footwear seemed to shine so brightly that without closer inspection I concluded that the boots were made of patent leather, but I was mistaken. The boots of all cavalry officers are of calfskin, made to order to fit the foot and the calf of the leg. The leg of the boot is not stiff like ours, but is soft and pliable, and is held up on the leg by its close fit and by a little loop from the inside that is fastened to a button on the riding breeches just back of the knee. It was almost what we would call a jockey's boot, but had a rather high heel and, of course, was of black leather throughout. The boot was soft as a glove, fitted closely without binding any part, and looked both elegant and comfortable. The patent-leather appearance was put there by the officers' servants, who, by placing boot-trees in the boots, then go over the entire boot with a tooth-brush handle till it is smooth, and then shine it with brush and cloth. I have never seen a body of mounted officers dressed in better taste as to footwear than the students at these cavalry schools.

Italian Walking Shoe.—The most serviceable and most sensible footwear for infantry, in my judgment, is worn by the Italian infantry, by both officers and men. It is a lace shoe, whose upper reaches almost half way between the ankle and the knee. The trousers are cut to fit the leg and reach almost to the ankle with buttons to fasten on the side. The shoe top fits close over the trousers and does not permit sand, mud or water to enter.

The shoe itself is strong, but not heavy. The sole is of good, heavy, oak-tanned leather, slightly thicker than the ordinary walking shoes, the upper of soft pliable leather that fits the wearer without wrinkling into bunches that gnaw the foot and cripple the wearer, no leggings or puttees; it was serviceable, durable, as water and sand tight as a shoe can be made, it could be put on and taken off easily and quickly. It served all the purposes of a top boot or a shoe and legging and has none of the disadvantages of either; to my mind it solves the question of footwear for the soldier, mounted or dismounted.

Before leaving the subject of officers' uniform I desire to merely mention the prime reasons for the neat, soldierly, I might say, elegant appearance of the foreign officer. It is because in all foreign armies every officer is allowed to select a personal servant from the organization with which he is serving to whom he pays a small sum extra, and this servant, usually an old soldier, looks after that officer's clothes, his horse and equipments. His servant goes with him in the field and looks after him there the same way, packs his kit and unpacks it, leaving the officer free from the petty annoyance of looking after such details that would distract him from his more important work.

His governments recognizes that most officers cannot afford a servant, as can the gentleman of his same social station in civil life, and it supplies a means by which its officers can be provided and cared for as gentlemen in their station should. It permits the officers to procure a servant at a reasonable price to do a servant's work and leaves him free to do an officer's work that the government expects him to perform and not to use his time doing the work of a menial. It stands to reason that the well-dressed, well-cared-for officer, the one freed from the petty annoyance of dirty equipments, badly-brushed clothes and boots, poorly-groomed horse, etc., is infinitely better fitted to do an officer's work than the one who

is not so well cared for, and it is true of the American Army officer more than any other, that he cannot procure a servant from among his soldiers to perform these services without incurring the displeasure of the authorities and the criticism of the inspector.

It may be said that soldier servants (strikers) are allowed in the United States Army, but it is not authorized, and the life of the average American officer in garrison and field is often rendered unhappy by having to perform some work quite beneath his position as an officer and a gentleman and which should be performed by his servant. The average officer cannot afford to pay a man servant twenty to twenty-five dollars a month and board him, and as a result, our officers do not present the neat, soldierly appearance of their brother officers abroad.

In our army strikers are tolerated, but must attend all drills, guard and other duties and a soldier's time to-day is so fully occupied with his duties that the time left to wait on an officer is extremely limited. In the field, the captain, as a rule, forgets the orders from the War Department and has a striker for himself and his lieutenants may have one also if the captain is kind, but unfortunately he is not always kind and quotes regulations for everybody but himself. Majors, colonels and even generals in our army are often dependent on the kindness of some captain to provide someone to perform the work of a servant in the field.

The necessity is apparent that the American officer should have the privilege of selecting a servant from the ranks. Why not meet it in a manly, dignified way, recognize it and provide for it? It would not be excessive to increase the enlisted force in each troop or company by three for this purpose, as the number of officers on duty with a regiment is rarely over thirty-six.

ENLISTED MEN'S UNIFORM.

The overcoat worn by the English and German soldiers is quite like the one recently adopted by the United States Army with this difference, that theirs has a plait down the back which acts like the bellows tongue of a shoe. When the garment is being worn, the surplus cloth in the back hangs in this plait or fold, is pressed so that it lies smoothly and is held in place by the half belt in rear. At night, when the soldier gets into camp

and he wishes to sleep comfortably he opens this belt and his overcoat serves as a blanket to be thrown over him. He may sleep in his clothes and by having this ample coat, capable of being made loose around the waist, he can sleep comfortably in it without removing it. In the morning, the coat being on, it is belted back as before. In this way the German and English coats appear to have the advantage over ours. In the French, Austrian and Italian Armies, they wear a coat similar to our old blue coat formerly worn by our enlisted men.

Fatigue Cap for Soldiers.—There are many kinds of head-gear for use on the drill grounds, at stables, on shipboard—in fact, almost every place except in the field. The simplest, cheapest and least objectionable is worn by the Germans and looks like a polo cap. It is made of cloth, without visor, is perfectly round, about the depth of our present cap, but the side is straight, the crown is flat. The objection is at once raised to the absence of the visor, but many kinds of head-dress, among civilized people as well as savages, do not provide shade for the eyes, and yet are desirable. Such a cap has many uses in service, is cheap, very serviceable, can be rolled up and put in the pocket. It looks neat and gives the soldier a smart appearance.

ENLISTED MEN'S APPEARANCE IN STREET.

In general, the enlisted men seen in the streets of the towns and cities of Ireland, England, Germany and Belgium were neat in appearance, soldierly in their bearing, but, above all, their clothes fitted them and they were the objects of admiration and the pride of their countrymen. The reason for this I found to be that their clothes were made at their station by troop or company tailors. It costs no more to have clothes made to fit them than it does to have clothes that are ill-fitting. These armies know that, and while some clothes used are ready-made, the uniform for street wear and for dress and full-dress occasions is made to fit the man. The effect on the appearance of an organization so clothed is apparent.

Another point quite as important as the well-made uniform is the care of it. In inspecting the barracks of a cuirassier regiment in Berlin, I noticed very few clothes in the squad rooms and what I did see were worn and soiled. Upon inquiry, I found that the best uniforms were kept in a large room, arranged like the cloak-room of a theater. Each soldier had

his peg; the room was under the charge of a non-commissioned officer, like the company quartermaster-sergeant and when a full-dress uniform was ordered, each soldier came to the window, got his nice uniform, and those articles of his equipment for full dress, went to his squad room and put them on. When the ceremony or drill was over he brushed his clothes, brought them back and handed them in to the sergeant, who is responsible for them while in his keeping.

The tailor shop was near, and any necessary pressing or mending was done there. Clothes were inspected by this sergeant, so that whenever that organization turned out it was uniformed according to orders, with handsome, well-fitting garments. The same course is pursued when a soldier goes on pass. He presents his pass to the quartermaster-sergeant who is authorized to give him his good uniform for use while on pass. After he is clothed in it, he presents himself to the officer or non-commissioned officer of the guard for inspection, and if properly dressed is allowed to depart. On his return from pass, he again presents himself for inspection, then returns to his squad room, changes his clothes and deposits his good uniform with the quartermaster-sergeant for safe keeping.

There are many advantages of this system. It keeps the clothes in a large airy room, where they are not crushed out of shape; they are free from dust, they are always subject to inspection, always ready for instant use. It prevents soldiers from accumulating a large amount of indifferent or poor uniforms and above all, it does away with the necessity for crowding the squad rooms with closets, the size of which in our service is gradually increasing, till it will soon be out of all proportion to what a soldier should really require.

FIELD MUSIC.

The field music of our infantry regiments is a simple thing, as the musicians use the bugle only. In both the English and German Armies these musicians are taught to use the fife and drum for music and the bugle for calls. This is an improvement, for there is no more martial music than the fife and drum; every soldier likes it and it improves the marching of the troops that possess it. The West Point corps of cadets, probably the most faultless marchers in the world as to step, carriage, steadiness and general bearing, are so as a result of their

marching three times a day, to and from the mess hall, to the music of the fife and drum, during the summer encampment.

The bugle alone, as we have it, is hideous for marching music; it is not music, and perfect time, necessary for soldiers to keep step, is almost never attained. Let the musicians of a company retain the bugle for calls, but give one a fife and the other a drum and the difference in the marching of a command in one year will be apparent. The effect of a fife and drum on tired and jaded troops toward the end of a long march is well known. We cannot afford to neglect these little points that inspire so much spirit, life and dash in the soldiers in peace, but especially in war.

A German drum corps, as seen with one of their infantry regiments, or the bagpipes of the Coldstream Guards, accompanied by drums, seen in London, the instant they strike up put a change in the appearance and step of the men in ranks that nothing else can.

HORSES OF FOREIGN COUNTRIES, THEIR TRAINING. RECRUIT HORSES. RECRUIT MEN.

It is a pleasure to a cavalryman to visit England to see the horses used in the mounted service there. The English are horselovers, and from the King to the cabman they seem to understand the horse better than any other race of civilized people. The horse in England is an educated animal; his breeding is carefully looked after, his training is their recreation, his care is their first duty, after caring for themselves. The result is that the saddle-horse is found there in large numbers, riding is more general than anywhere else, and hence the cavalry service can secure horses better suited to its requirements than can be found in most other countries.

The grooming and care of horses seems better understood in England, the shoeing is more satisfactory and the English horse, like the English gentleman, presents a high-toned, well-fed, well-dressed appearance. The horses at the riding-schools of Europe are exceptional; they are carefully educated for that particular work, are higher priced than the troop horse and belong to the first-class saddlers.

The troop horses of France were not exceptional in appearance nor training; those I saw in the German cavalry showed a vast amount of training. The Austrian horses, mostly from Hungary, are very desirable mounts. To be a hussar is the

highest ambition of the Hungarian soldier, and instead of trying to avoid the greater amount of work in the cavalry, the soldiers from Hungary exert themselves to be assigned to the cavalry during their service with the colors.

The Italians have no special type, but there is a large sprinkling of Arabian horses in their army. Their horses are smaller than most horses used in European armies, but they are well suited for the mountainous work in Italy.

One point noticeable in the training of cavalry abroad, and one that should be impressed on every officer who attempts to train men for mounted service, is that the horse and man are trained separately.

The horse is taken as a recruit horse, placed in the hands of experienced non-commissioned officers and privates and is trained in his gaits, turnings, head bendings, etc. This training is continued till he moves through the drill with the precision and steadiness of the older squadron horses. He is then placed in the squadron and has a rider assigned.

The recruit cavalry soldier, after his dismounted drill and his instruction on the wooden horse, is taken to the riding-hall or ring and is mounted on a well-trained, tractable animal. He is then taught his position, manner of holding reins, lance and saber mounted, and while on this trained animal, he can pay all his attention to his own training and is not distracted by an unruly, untrained, untamed horse. This gives him confidence in horse-flesh at once, it wins him to the mounted service; he likes his horse, he likes the confidence this horse exhibits, and at once he recognizes the capabilities of an animal trained for the cavalry service.

After he has ridden this animal for some time, after he has acquired a knowledge of the aids to horsemanship, he is then ready to handle horses not so well trained and to bring them up to the standard of his first mount, which for more reasons than one should be perfectly trained.

The common sense of such a system appeals to you at once; you save time in training both horse and man, and in the end you have both better trained in their required duties.

Stable Appointments.—In the stables of Europe they have the odd custom of keeping the bedding under the horse all the time. This is not a peculiarity of one country, they do it in all. Their horses, as a rule, appear to be well cared for and the shoeing, especially in France, was exceptionally good. They

do not have picket or standing lines for grooming, but in fine weather they are tied on the sides of the stables.

I noticed several good devices in their stable arrangements which might well be adopted by us; for instance, the French have a way of tying their horses so that each horse can reach his own feed and cannot interfere with his neighbor, at the same time the horse can lie down at ease and still not have so long a strap or chain that there is danger of his being entangled. It consists of an iron rod attached just at the feed box or the manger and reaching to the floor where the second attachment is made. The bar is close to the manger, but enough space is left between it and the manger to allow a ring to slip freely. To this ring is a short chain, which is fastened to the halter, giving the horse enough freedom to feed properly and to lie down, but he cannot reach the feed boxes of his neighbors.

Another good device used by the French also, was a large double hook on the top of each heel post for saddle, bridle and equipment, when the soldier is saddling or unsaddling. This hook is high enough to make it impossible for horses to injure themselves.

Another ingenious device, and still a simple one, was a saddle rack or rest countersunk into the heel post. When needed it was lifted up, and a diagonal support that caught in a socket sustained it. When not needed it was dropped into place.

The horse blankets used were clean and evidently are washed very often. The saddles and bridles were in excellent condition and the steel bits shone like silver. If they can keep their bits so clean the American soldier can do the same, and I believe the steel bit superior to the nickel-plated or tinned. The only advantage of the latter is that it saves time for the soldier, but his horse equipment is not nearly so neat. I attribute the cleanliness of their equipments to the custom they have of requiring the soldier, upon the completion of each drill or exercise, to clean the equipments used on that duty.

Riding Halls.—The English, French, Germans and Austrians recognize the great benefit obtained by constant and systematic training of the horse. To do this without interruption, shelter is necessary and numerous riding halls have been provided. These halls are not large, as a rule, and for a reason. They do not contemplate that they should be large enough for a troop or squadron drill, they are satisfied if they accommodate a platoon or less, and believe that twelve or fourteen new horses

can occupy the attention of one instructor with better results than by crowding the hall with a larger number.

In addition to their riding halls, they have riding circles and rectangular enclosures for out-of-door work, not large, but of sufficient extent for twelve horses to be exercised at once. The instructor, dismounted, stands in the center and devotes his whole attention to the men and horses under instruction.

These provisions, the riding halls and the out-of-door enclosures, merit our serious consideration. Large halls are not a necessity. The cost of construction is not great, but the results obtained are striking. In large posts there should be one hall, at least, for every squadron of cavalry or battalion of field-artillery.

OFFICERS' RIDING-SCHOOLS.

The one crying need in our service that impresses itself vividly upon the American cavalry officer traveling abroad is our lack of an officers' riding-school. This is also apparent in the inspection of any of the cavalry regiments and its want is more strongly evident in the lack of training of our cavalry horses.

Let us take, for instance, the West Point cadet, the average graduate, who, prior to his service as a cadet, has seen little if any horseback riding and has received no instruction whatever in the art of training horses. Upon graduation he is expected to pass to the regiment and be ready to instruct recruits in the difficult accomplishment of training horses for the cavalry service.

No man is born a horseman; men become horsemen by study and close contact with a horse. The cadet learns little about a horse at West Point because he has no time to go into the subject deeply; if he manages to ride well by his first-class year he is proud of the accomplishment, but his knowledge of horse, saddle, bits and biting is quite meager.

The need of a course of instruction in this most important part of a mounted officer's education in the United States Army is apparent, and by supplying it the results will be far-reaching.

I do not regard it necessary to follow blindly the courses laid down in foreign schools, especially that part relating to the training of fancy-stepping horses, or the excessive coursing or cross-country riding practiced there. I do believe in a ten-months' course of instruction for every cadet before he

joins the mounted service and at least one officer from each regiment and two, if possible, for the same period. I further believe that the course should be for riding and riding alone. I would limit the theoretical instruction to lectures once a week by riding-masters, but let everything else be practical. A knowledge of the horse, how to train and ride him, is what is desired, and while I do not despise the valuable works written on the subjects, the book should be secondary. A practical illustration by a riding-master to a class of say, fourteen officers, with a freedom to ask questions, is worth more than days of book reading.

Let these officers ride not less than five hours a day, good hard work; let them be taught how to ride the English and McClellan saddle, the proper biting of horses and the manner of training mounts so that they will be useful to the mounted soldier. The whole secret of efficient cavalry is the horse, for without the horse, the properly trained horse, you have no cavalry.

I recommend that such a school be established, and that it be placed far enough south to permit out-of-door work, if possible, the whole year round. I would place it near a large city, so that it would be a desirable place for young officers for station. I would offer some reward to the first five officers in each class, who, on the completion of their course, were declared by the board of instructors to be the most proficient in practical horsemanship.

Let these officers return to their regiments, and after five years the effect of this school would be quite apparent in the mounted service of our army. We will have officers who are better riders, enlisted men who are better instructed in riding, the class of horses ridden by officers will improve, the training of the troop horses will be more thorough and we will be creating a class of horsemen who will eventually buy all the cavalry and artillery horses for the services because of their acknowledged ability to judge horse-flesh, and in the end, the breeding of better saddle-horses in our country will receive a great impetus. Thus the benefits derived from an officers' riding-school must not be viewed from the narrow standpoint of the military service only; we must comprehend the ultimate effect it will have on our country in general.

MILITARY ATTACHES.

While in England, France, Germany, Austria and Italy, I called upon the military attachés at the several embassies in those countries. It is unnecessary to refer to them in any other connection than the position they occupy with respect to the attachés of other countries.

While our officers accredited to other countries, are, as a rule, men of greater experience and more years of service, they are very inferior in rank to the attachés of other nations serving with them and are always placed below those officers at official and social functions. While this is of little moment to the ordinary civilian in our country, it is looked upon quite otherwise in Europe, where a man's reception, his standing and his treatment depend in great measure upon his rank.

Another serious drawback to their position is that the expenses of an attaché who properly carries on the duties of that position are more than he can afford on his present salary as an army officer. All those at the European capitals are captains, with one exception, where a major occupies the place, and even a major's pay is not sufficient. The American officer detailed for this important work should be a picked officer, noted for his professional ability, his zeal, his appearance, his affability and his tact. To use a common expression, he should be "a good mixer," one who is at ease under all circumstances, a good fellow and one who has the charm of making friends with all whom he meets. Such a man not only reflects credit on his government, but he is able, because of his graceful, easy, approachable methods, to reach people in a perfectly proper way and obtain much information that is often lost, or that requires the laborious, time-consuming method of routine application through high officials, which often results in a refusal.

Unfortunately, officers possessing these rare combinations of traits are generally limited as to their income to the bare monthly pay of their rank; they cannot afford such an expensive assignment. As a result, the indispensable condition to the selection is that the officer shall have an income outside of his regular pay. This brings the detail in our army within very narrow limits and rarely includes the bright, ambitious, energetic workers that would do most credit to the position.

It seems to be good government and good policy to have

the most capable officers in these positions, and it does not seem unreasonable to ask that, when men are detailed as military attachés to embassies, that they have the rank and pay of colonels. In addition to the above, each officer should have a clerk and an interpreter to keep up with the current work of the military life of these nations and not be held down to a typewriter, when they should be out observing military matters.

Such provisions would give our attaché abroad the position and the means that the military representative of our great nation should possess. He can take the place that should be his, he can be the companion of colonels and generals, men of his own age and about the same years of service. He will be as much sought after by them for information as they will by him, for the simple reason that his rank and appearance stamp him as high authority on American military affairs. The advantages that will be gained by us should not be measured by the temporary rank and pay granted to the officer.

Another and a quite important consideration is the length of time that attachés should remain at these embassies. It must be remembered that at all the Continental courts, the officer must, as a rule, learn one foreign language and two are better. Under the present system of four-years' detail, he just about becomes proficient in the use of this new tongue when his time is up. The new incumbent has to begin all over again and he in turn goes home when he is in a condition to render the best service to his government.

A second consideration, by no means unimportant, is that it takes an American officer two or three years to become well acquainted with foreign officers and familiar with their ways of doing business. There are many ways of getting information, but it takes time to learn the expedients in acquiring it. The officer, after three years, knows most of these ways and is in a position to conduct his work in an efficient manner and why not make the length of his detail depend upon the kind of service he does his government. Let it be known that his recall depends upon his efficiency and make it so.

When an officer does demonstrate that he is valuable in that particular position, keep him there as long as possible. Military information of other countries is what we want; we must know the pace at which they are moving, or we will be languishing in false security. When we have a man that gives us that

information, that keeps up to date in everything military, he can well be spared from other duties even for a long period. Keep the round pegs in round holes, for it takes time to wear the corners off square ones to make them fit smoothly, and time is everyth ng nowadays. I know of one attaché in Paris who has been kept there by his government seventeen years; he is an expert in ordnance and has invented valuable guns. The work of such a man is priceless.

DETAIL OF OFFICERS WITH FOREIGN ARMIES.

I noticed in all the Continental armies that there were officers of foreign countries serving therein. I learned that through the courtesy of the various governments officers from other countries came to serve in these regiments for instruction. It would enable us to learn more of the actual work of foreign armies if we had some of our officers serving therein for a period of one or two years, could such permission be obtained.

Some years ago, the late Lieut. P. H. Clark, Tenth Cavalry, did serve in one of the German Uhlan regiments, but I have never heard of another American officer having that privilege. Should it be possible to get permission to do so, it would be beneficial to send these officers, one of each of the arms of the service, to the armies of the six great powers of Europe. Let them remain there two years, then send three more. These men would learn more than in any other way, and the chance to secure one of these details means a chance to learn a foreign language, which would be eagerly sought by promising officers. Such details might be held out as a reward for high standing in the practical schools in our service.

GENERAL REMARKS ON THE ENCOURAGEMENT OF OFFICERS TO GO ABROAD.

It is surprising to know the vast amount of military knowledge the ordinary observer can obtain by a visit to Europe, while for a military man the field is limited only by the time he has to spend there. France and Germany are the store-houses of military relics, histories and maps, while all over Europe are scattered the fields of decisive battles.

The American officer who goes abroad cannot help comparing what he sees there with his own; he unconsciously decides on which is the better and, if it is theirs, he resolves to remember it and introduce it into our own army, if practicable.

It is in Europe that we see large armies such as those used in war and where they make military work a serious business. Possessed of some letters of introduction, or by seeing the attachés, permission can be obtained to visit most of the foreign armies and to observe their drills.

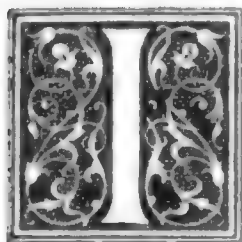
The officer who spends his time in observing European methods, or in acquiring a foreign language, should receive some encouragement from his government, for it gives him knowledge of professional value that can be acquired in no other way. It makes him familiar with the officers and soldiers of those countries, he finds out their standards, and can judge fairly well their value in war. Above all, he learns their methods of training young men, so necessary in the event of war in this country, where large numbers of untrained men must be called to the colors on short notice, with little or no time for instruction.

Officers on leave should be offered inducements to go abroad; it takes them out of their narrow army life, it gives them many new ideas and destroys many erroneous ones that they have perhaps gained from reading. In some cases it brings us to a proper appreciation of the soldiers on the other side, and we learn that while our opinion of our own army may be high, we are not in everything the best in the world.

Make it possible, therefore, for officers to see these countries and their armies; in addition to the one month a year on full pay, give them two months provided it is spent abroad for professional advancement, and require detailed reports of their trip. This would give an impetus to officers to go abroad, they would come back with greater interest in their profession and the knowledge gained would materially benefit our army. One visit makes an officer who loves his profession want to make another, for he realizes that Europe is the fountain of military knowledge and a visit to the source keeps him abreast of the advancement made there in his particular arm.

THE OPERATION AND MAINTENANCE OF A RAILROAD IN A THEATER OF WAR.

BY CAPTAIN W. D. CONNOR, CORPS OF ENGINEERS.



HAVE no apologies to offer for this subject which is perforce a dry one to think about or to listen to, for it is full of lively interest to the military student of to-day.

To the question How can an army of two corps operate at a distance from its base in a hostile barren country without railway communication? there is only one answer—It cannot.

This artery of supply is vital to the army's existence, and woe to the general and woe to his army if he allows it to be permanently disabled. So great is its importance, that when Kuropatkin was being slowly driven back from the Yalu, it was reported that with only 50,000 men in his field army, he was using 60,000 men to guard the two steel ribbons that stretched away thousands of miles to his rear and on which he based his hopes for reinforcement in men and materials.

THE CIVIL WAR.

The late Civil War in this country was the first war in which railroads were a potent factor. It is true that 30,000 Russian soldiers were moved by rail from Poland to Austria in 1849, and that the Austrians used the railways to concentrate their troops on their northern frontier in 1850 to threaten Prussia. The French and Austrians again used them in 1859, but this war was of such short duration that it did not serve to show the possibilities of this means of transportation.

BULL RUN.

The Civil War practically began with the first battle of Bull Run and the issue of that battle was decided when Johnston's troops arrived on the field. These troops had been in the Shenandoah Valley, opposing General Patterson. They were suddenly withdrawn from the valley and moved by rail to Manassas where they arrived in time to participate in the battle.

ATLANTA CAMPAIGN.

From this time on, the railroads were used as lines of communications wherever they existed, and in many campaigns, such as those in Kentucky, Tennessee and Georgia, the railroads were so absolutely necessary to supply the army that nothing except minor operations occurred off the line of the railroads. With reference to these railroads General Sherman says in his "Memoirs": "The Atlanta campaign would simply have been impossible without the use of railroads from Louisville to Nashville—185 miles—from Nashville to Chattanooga—151 miles and from Chattanooga to Atlanta—137 miles. But as I have recorded that single stem of railroad supplied an army of 100,000 men and 35,000 horses for the period of 196 days, viz.: from May 1 to November 12, 1864. To have delivered that amount of forage and food by ordinary wagons would have required 36,800 wagons, of six mules each, allowing each wagon to have hauled two tons twenty miles a day, a simple impossibility in such roads as existed in that region of country. Therefore I reiterate that the Atlanta campaign was an impossibility without those railroads; and only then because we had the men and means to maintain and defend them, in addition to what were necessary to overcome the enemy."

The largest movement of troops in the Civil War was the movement of Hooker's two corps, the Eleventh and Twelfth, consisting of 23,000 men, from Catlett's Station, Va., to Chattanooga, Tenn., a distance of 1192 miles in seven days. This was followed, in January, 1864, by the movement of Schofield's Army of the Ohio, 15,000 men, from the valley of the Tennessee to Washington, a distance of 1400 miles in eleven days.

THE FRANCO-PRUSSIAN WAR.

But all these performances sank into insignificance, and the scientific use of this powerful aid to an army was for the first time illustrated by the move of the German Army to the Austrian frontier in 1866, and again, on a much greater scale when the German Army invaded France in 1870.

"The great utility of the railways in the Civil War attracted the attention of the military authorities in Europe, and particularly of Marshal von Moltke, Chief of Staff of the Prussian Army. He saw in them the means of getting a decided stra-

tegic advantage by placing the Prussian Army on the frontier before any possible adversary, thus to overwhelm him before he was ready to attack. After years of study and with the experience gained in the Austrian War of 1866 he was able to make the marvelous concentration of 1870 which has commanded the admiration and wonder of every military student.

"Between the 23d of July and the 9th of August, 456,000 officers and men, 135,000 horses and 14,000 guns and other carriages were transported from the different provinces of the North German Confederation to and beyond the Rhine River, and in such a thorough state of preparation that hostilities were begun by invading the enemy territory even before the last contingent had arrived. Only six trunk lines were employed in this movement which required 1205 trains; most of the lines were only single track roads. The difficulties involved in perfecting the plan for this movement become even more evident when it is remembered that at the outbreak of the Franco-German War the railways of North Germany numbered ninety-five independent lines controlled by nineteen independent states and forty-five private corporations.

"Without wholly stopping their private business, it was necessary to unite them in a plan by which nearly half a million of men with supplies should be transported, without unnecessary fatigue or privation, from every station of the North German Confederation to the French frontier.

"It is evident that such a plan required not only the most thorough study of the maps and resources of every road, but also the hearty co-operation of the military and railway authorities. As in the Civil War, the railways captured from the enemy were operated by the military authorities and served to supply the army in its campaign in France. The reinforcements afterward sent to this army to replace losses, etc., numbered 244,000 officers and men, 22,000 horses and 116 field-guns. The prisoners sent to the rear numbered 384,000 and the sick and wounded 240,000."

RAILROADS BUILT SINCE FRANCO-PRUSSIAN WAR.

"Since the Franco-Prussian War the military authorities of every European country have devoted much time to the study of the railway-transportation problem in war. Military railroads have been constructed to supplement the civil lines where these do not suffice for the prompt movement of

troops. The German problem is much simpler than it was in 1870. Sixteen through lines connect the German territory with the Rhine and cross that stream on iron bridges. Double track railways follow both banks of the stream. Eight lines penetrate Lorraine and are united into five lines at the frontier. Seven lines lead from the Rhine to the Vosges Mountains in the province of Alsace. Practically all the railroads are owned and operated by the State. In 1870 France found her lines defective from the fact that they all passed through Paris; now she has practically an independent through line from each army corps district to the frontier*."

THE EGYPTIAN CAMPAIGN.

The use of the railroad that General Kitchener made in Egypt in 1897-8 illustrates the fact that a railroad is sometimes so necessary that one must be constructed in the field to render the completion of the campaign a possibility. On this campaign the water and rail transportation practically ended at Wady Halfa, on the upper Nile, and the army was still over four hundred miles from its objective point, Khartoum. The solution of the transport problem by means of camels was out of the question; the cataracts and rapids precluded the possibility of water transportation above Wady Halfa, and a railroad across the desert or along the Nile was the only solution. The route along the Nile was so difficult as to be prohibitive both as to cost and time of construction. General Kitchener, after long consideration and in the face of adverse criticism, decided to build a line from Wady Halfa to Abu Hamed, a distance of 230 miles across the desert. The work was placed in charge of Lieutenant Girouard, R. E., and Egyptian Army, and he with a few other subalterns of the Royal Engineers undertook the difficult task.

The work began January 1, 1897, and forty miles were completed by May 8, 1897, then work started in earnest and between then and November 1st 190 miles of embankment and track were built in spite of the opposition of the elements and of the enemy. From Abu Hamed the line was continued to Atbara, a distance of 154 miles, to which point the road was completed in July 3, 1898. The greatest length of embankment built and track laid in one day was 5300 yards and the

*Strategy, by Col. G. J. Fiebiger, U. S. A.

average, in spite of sand, sun and wind, was about one mile per working day.

SOUTH AFRICAN EXPERIENCE.

At the end of the Egyptian campaign Lieutenant Girouard was retained in charge of the Egyptian state railroads until 1899, when he was called upon to take up another similar and equally difficult task as Military Director of the South African railroads in the British-Boer War. A full description of this work is impracticable here and a brief sketch would not do justice to the great work of Colonel Girouard. Let it suffice to say that there were about 4600 miles of road to be controlled, of which about one-third was in the hands of the enemy at the beginning of the war. I have been assisted greatly in the preparation of this paper by Colonel Girouard's report to the British War Office in 1902.

THE PHILIPPINE INSURRECTION.

The only railroad in the Philippine Islands was the Manila-Dagupan line, about 140 miles in length, running north from Manila. This road was used to supply General MacArthur's army when it advanced north. There is little to learn from the operation of this road except to those who had immediate charge of its repair and operation. For the first six months it was repaired and operated by the Quartermaster's Department which managed to get two trains through daily. The officer in charge of the road was one of the most efficient officers in the Islands, but he was at the same time in charge of another important department that required practically all his time and energy, and as a result the work was left largely to the soldiers and civilian employees.

After this the work of repair was in charge of the chief engineer of the Eighth Army Corps under whom the railroad was repaired and then turned over to the Quartermaster's Department for operation. The road was finally administered by a board of officers as its directors and officials. The main points noticeable were: The absolute lack of preparation to handle such a matter, the lack of a prearranged and continuous responsibility in any one man or department that would require proper preparation for the repair and operation of a railroad distant from the point of supply, the apparent lack of appreciation of the importance of the subject and the

evils of the dual authority in the separation of the repair and operating departments.

TRANS-SIBERIAN RAILWAY.

Every one is much interested in the latest example of a railroad as a war factor, the Trans-Siberian Railroad. The facts as to its capacity are very meager. It was at the outbreak of the war operating seven trains each way daily. The sidings were far apart, and the ferries across Lake Baikal delayed the traffic to a considerable extent. On the outbreak of the war, work on new sidings was at once begun, and in the first nine months 200 were put in. As a result of this, and the new circum-Baikal route, there are now running sixteen to eighteen trains each way daily. Of these, thirteen are military and the others are civil. Of the military trains six are for troops and seven are for materials. The troop trains are said to carry about eight hundred men each. Up to January, 1905, it had transported 300,000 men, besides supplies and munitions.

Facts in regard to the road are hard to obtain, but its performances have already so far exceeded its supposed capacity that the history of its operation will be of great interest to the military world.

TWO KINDS OF RAILWAY PROBLEMS.

In the event of a war there are two distinct and widely different conditions that may arise; they are, a movement by land and an expedition across the seas. In the latter case all the difficulties arise that inevitably attend such a campaign. To meet the railroad problem under such circumstances, all the material that will first be needed must be estimated, purchased and transported, and to insure success the complete *personnel* for its operation must be gotten together before the expedition starts. A landing must usually be forced, and then the railroad work undertaken in all the turmoil and confusion incident to such a landing. If any railroad exists from this new base, the enemy, if he is worthy of consideration, will have taken away every moveable piece of property and will have destroyed or damaged everything that is left.

EXPEDITIONARY FORCE.

The railroad work of such an expeditionary force will properly be: first, the construction of a temporary railroad for

landing purposes, and second, the repair and operation of any pre-existing road, or the construction of a new one. The problems of construction do not come within the limits of this subject, and after securing the new base the operation differs from the similar problem from a friendly base only in that the difficulties to be encountered and overcome are magnified by the distance and by the difficulties of supply and transportation.

OPERATION FROM A FRIENDLY BASE.

When the campaign is to be made from a friendly base there will always be railroads leading into the hostile territory, while behind the army is the home country and all its vast railway resources from which supplies and rolling stock can be had on a few hours' notice. Under these circumstances the railway question may be divided into three parts: The construction of new roads, the operation and maintenance of the roads leading from the mobilization centers to the points of concentration and thence to the base of operations, and lastly, the operation and maintenance of the roads from the base of operations to the rear of the army in the field.

MOBILIZATION AND CONCENTRATION PROBLEMS.

The construction question does not concern us at this time. The second of the above points was covered in the late Civil War by a convention of representatives of all loyal roads not lying in the theater of war. In this convention the requirements of the Government were fully explained and the railroad men promptly agreed to fill them. An agreement was made, in which the preference that the government men and materials were to have in transportation, and the rates of compensation therefor were fully covered. The regular civil officials kept control of the railroads. This will undoubtedly be the solution of the problem in any future war in this country, and it removes a great burden from the military authorities to have so difficult a question so easily settled. The last problem, or the operation and maintenance of a railroad in the theater of war, is the most difficult to dispose of.

Experience has shown that in crises unity of command is essential to a successful encounter with difficulties, and the management of a railroad is no exception to this rule, and in the Civil War there was practically chaos before the military

railroads were finally all placed under one head. The railroads were managed differently in different fields, and there was so much wasted energy and so much bad service that, in October, 1863, all the military railroads were placed under Col. D. C. McCallum, as Superintendent of the Military Railroads of the United States. He promptly organized them on a working basis and the successful operation of them afterward is largely due to his energy and ability.

On January 31, 1862, Congress passed a law authorizing the President to take all railroads in the United States for military use. The action of the convention before mentioned, and the zealous co-operation of the loyal roads, made the extreme exercise of this power unnecessary, and no loyal road outside of the theater of war, was ever used as a military road. An act of Congress like the foregoing can give plenty of authority to operate railroads, but tardy legislation can never give with that authority the trained men and the matured plans required to operate a railroad.

PREPARATION IN TIME OF PEACE.

It is probably wise policy not to have any railroad-operating troops in time of peace. Such an organization could only be small; its opportunities for railroad work could not be such as to keep it efficient; its personnel would perforce be the average enlisted men and the result would be only a play at railroading. Such an organization would induce a false sense of security in the minds of the powers that be, and in case of war, the same number of better men could be employed in less than a week from civil life. But because it may be wise not to have this class of railway troops in time of peace, is no excuse for being totally unprepared to meet this great military problem on the outbreak of a war.

ENGINEER TROOPS AS RAILWAY TROOPS IN TIME OF PEACE.

It would seem advisable to form one company or battalion of engineers of the present establishment into a railway organization, not as a nucleus, but as a depot company or battalion, in which all appliances and tools would be tried and approved or disapproved for future use.

By this means a suitable outfit could be worked up, which, while probably not the best, would at least be an official equip-

ment and would be a beginning and form a basis for future enlargement.

This plan would have an advantage over an office where lists and information, only, were kept, in that troops would be continually using the equipment, noting its deficiencies and improving its possibilities, whereas, if lists alone were kept, there is always the danger that the listed equipment will either become obsolete or it will be found impracticable when sent into the field. A list on paper is prone to provide a more bulky and heavy equipment than would be provided by troops using and transporting such an equipment in the field.

RAILWAY SECTION OF THE GENERAL STAFF.

Long before a war threatens, a section of the General Staff should have this subject in hand and a suitable man for the head of the military railroads should be selected. The Army Regulations of 1904 provide that the railroads from the base of operations shall be in charge of an engineer officer, and the new field-service regulations call him the Chief of the Field-railway Service. Selected in time of peace, he should be notified that his work on the outbreak of hostilities will be those indicated by his official title, and that he is preparing in peace to aid himself in war. The man who prepares the plans in peace should surely be responsible for their execution in war.

DATA FOR RAILWAY USE.

The chances of getting a poor man in this way are less than they will be in the hurry of preparation for a campaign, and a fair plan, ready and worked out as to the details, is better than the most perfect general plan with nothing worked out in detail. In the office of this section should be the most complete and exhaustive data regarding the general subject of railroads that can be obtained. Lists of available and desirable men, both in and outside of the National Guard, in all sections of the country, should be kept up to date. Every railway question that has ever arisen should be studied in the light of the conditions that would govern it in military use. The subject of modern railroading should be studied in all its phases, not only theoretically, but in that best of schools, a modern railway system.

PLANS FOR MEN AND MATERIAL.

The plans should be so perfect and complete that when the call for troops comes, one man is prepared and authorized to handle all railway questions in whatever nature. He has standing contracts with all railways to move men and materials to any and all parts of the country, and by sending a few telegrams he can have, if he wishes them, in one week, a corps of trained railroad men for a system of 1000 miles in length. In this corps there will be men who can do every duty required on a railroad system from those of the general manager to those of a section hand, and can do them well.

EXEMPTION OF RAILWAY EMPLOYEES FROM CONSCRIPTION.

As the Civil War progressed, the War Departments of both the North and South were besieged with applications from the various railway companies asking to have their employees exempted from enlisting and from the conscription. Many roads, and among them the Pennsylvania Railroad, stated that they were seriously crippled by the loss of their operatives under the conscription acts. All railroad companies would doubtless be glad to have some assurance that their employees would be so exempted, and in consideration of such exemption they would co-operate with the Government in the operation of the military railroads and would furnish the employees for those roads up to 5 per cent. of the total of their own employees. They would also insure these men a return to their positions after the cessation of hostilities. In this or in some similar manner the corps of railroad men could be made to comprise many of the best men employed in the various grades on the different railways.

OFFICIALS AND EMPLOYEES ON A RAILWAY DIVISION.

The chief of the railway section would, by associating with railroad men, become acquainted with men whom he personally knew to be highly efficient and well equipped for the positions that they occupied. This class of men, in any section of the country, are well known to one another and they can practically be rated as to their ability. Among these he would decide on one whom he would enroll as general manager, and others for general superintendent, chief engineer, chief accountant, and other heads of departments.

He would select certain men for the superintendents of divisions, and aided by these, he would enroll all subordinates, including all grades where special skill or knowledge is required. These would include such men as train despatchers, train masters, master mechanics, road masters, operators, enginemen, conductors, brakemen, switchmen, freight-house men, car repairers, machinists, bridgemen, etc., and would constitute the complete personnel to operate a railroad.

Under normal conditions a freight locomotive can run about one hundred miles on a freight run. Two such freight sections as this make a division of about two hundred miles, which is a good unit of control and which we will consider as the length of road under a division superintendent. This would be the unit of the organization. The division superintendent is the head of such a division and all the employees thereon are subject to his orders and all work on the division is done through him. The following is about the personnel for a division of 200 miles, assuming the conditions as unfavorable as they would probably be in a theater of war: One superintendent, two assistant superintendents, two division engineers, one master mechanic.

UNDER THE ASST. SUPERINTENDENTS	UNDER THE DIVISION ENGINEERS	UNDER THE MASTER MECHANIC
4 Chief despatchers	2 Asst. engineers	2 Asst. master mechanics
5 Trick despatchers	2 Instrument men	6 Roundhouse foremen
2 Car distributors	2 Clerks	2 Traveling enginemen
20 Station agents	12 Supervisors of subdivisions	90 Enginemen
40 Operators	20 Foremen	90 Firemen
4 Train masters	60 Subforemen	4 Storekeepers
80 Conductors	40 Cooks	2 Asst. storekeepers
160 Brakemen	4 Commissaries	2 Chief car repairers
6 Freight agents	4 Quartermasters	30 Machine-shop men
6 Yardmasters	4 Draughtsmen	30 Boilermakers
120 Switchmen	4 Bridge men and Mechanics	30 Roundhouse men
12 Experienced clerks		30 Car builders

This would make a total of 716 men with seventy officers and 298 warrant officers, and would constitute one Volunteer railroad regiment. One such regiment enrolled about each of the great railroad centers like New York City, Chicago, St. Louis, Denver and Atlanta would give a sufficient number of skilled men to operate 1000 miles of railway, and by the time that more were needed they could probably be obtained from the old employees of the line that was being operated. Nevertheless the railroads should be pledged to give their men

up to 5 per cent. in case that many men were needed, because the number of men employed is great and they may all have to be obtained by this means. The maximum number employed in the Department of the Mississippi in 1864-5 was 17,000, 12,000 of whom were in the operating department and 5000 of whom were in the construction corps. In making up the foregoing list I have not included therein the various classes of skilled labor that would be employed, but for which no previous railway experience is needed. These can be employed at the time or can be enlisted with the others.

GENERAL OFFICIALS.

The general officials first mentioned must be the keenest in their respective lines that the country affords. They will be specially selected by the chief of the railway service, and kept by him in his office, where they will have general charge and from whence they will direct operations. They will keep in close touch of the situation, visiting the different points on the divisions as often as necessary. They will supply the technical railway knowledge to carry out the military necessities and requirements laid down by the chief of the railway service.

CALLING OUT THE TROOPS.

After the men have been selected and enrolled, their names and addresses will be kept in the office of the railway section, and on the call for troops they will be called out as they are needed. Some will be needed at once at the concentrating rendezvous, and others as the war progresses. They will be notified by telegraph, and ordered to report on a certain date at designated rendezvous for transportation to the point where they are needed. The quota must be called out in time to allow the officials and men to become familiar with the requirements of the situation, for the best railroad man is useless until he knows his division—its stations, sidings, grades, equipment and condition of the roadbed. With any extensive railway communications the foregoing will be the ultimate organization, regardless of the route followed in obtaining it, for it was fully demonstrated in the Civil War that detailed soldiers were not able to fill the requirements, and wasted energy and bad service were the uniform results of every such experiment.

DUTIES OF THE RAILWAY SECTION.

In the office of the railway section must be kept detailed maps of every railroad in this country, and in every country where military operations may occur. These maps should show bridges, tunnels, sidings, "Y"s, roundhouses, grades, curves, etc. Special detailed information as to bridges must be had because the enemy will undoubtedly destroy any bridge before letting it fall into our hands, and duplicates for all such bridges or material for the rebuilding of the same must be ordered at the beginning of the campaign. This was the experience and the remedy in South Africa and the quick repairs made were the result of the wise forethought of Colonel Girouard.

In this same office must be kept complete lists of materials and supplies that will first be needed. These will be obtained from the head of each department, or from some friendly railway official, and contracts should be made with the supply houses to furnish the supplies when ordered. A telegraphic order would then start the necessary supplies to wherever it has been decided to establish the base storehouse. This storehouse should be more fully equipped than one used by the same length of line in time of peace on account of the greater waste and greater damages on a military road.

On the declaration of war the heads of the various departments must be called out, or employed at once so that they may make a study of the problem that they are to attack. There will be no active work to be done by the operating department for some time after the outbreak of a war, if we may judge from past performances in this country. These heads of departments assist in the preliminary work and the collection of employees, and so prepare themselves that, when the advance begins, they are ready to follow behind and keep the railway operating up to the rear of the army in the field.

If some enrollment plan has been carried out, there will be little work in bringing the employees to the concentration point, for an essential clause in the enrollment papers would be one agreeing to report for duty whenever and wherever required by the Government. The men of this organization are higher grade men than an ordinary soldier and the pay should be higher, accordingly.

WARRANT OFFICERS.

To meet this, a certain number of warrant officers, such as we have in the navy, have been provided for. They would be between an officer and a non-commissioned officer. There would be several grades of these with pay to correspond. These are the men most difficult to obtain on short notice, and upon their experience and fidelity so much depends that they should be selected with the greatest care. A military organization should be adopted, if it is possible, for if it is, many difficulties will be avoided. If not, and civilian employees are used, as was the case in the Civil War, the chief of the railway service must bear in mind that they are not enlisted men, but that they are hired employees, giving their services to their country in a hazardous undertaking for a consideration. The Government has secured presumably the best talent, is using it on dangerous work with little hope of reward, and the remuneration should not be grudging. General Sherman says: "I am convinced that the risk to life of the engineers and the men on that railway fully equalled that in the skirmish line and called for as high an order of courage and fully equalled it in importance."

USE OF TROOPS AT THE CONCENTRATING RENDEZVOUS.

It would be a mistake to use the military operatives at the concentration centers unless necessity demanded it, for these railways are assumed to be under civil control and they would desire to use their own operatives. As to the construction department, however, it is a different matter and they should be ordered to the desired point at the earliest moment. There will be miles of sidings to be built, storehouses, platforms and stock yards to be constructed, and these men can do this kind of work better and quicker, and with more understanding and fewer instructions than can soldiers or civilians picked up haphazard.

TAKING THE RAILWAY.

The railroad, if a friendly one, would have to be taken by the order of the commanding general or of the Secretary of War as a war measure. There should exist a general set of regulations to cover such military control which would be complete enough to start work with. As soon as it is known which

road is to be used a set of its operating rules should be obtained and, based on them, a tentative set of rules must be issued to cover the work of the military operatives on that particular line. Gen. D. C. McCallum says: "From an experience of many years as a railroad manager, and having been two years engaged in the operation of the military railroads, the most competent manager in the country, if without previous military experience, would find in attempting the work that the requirements of the work would set at naught all his former opinions and experience." Therefore the military requirements of the situation should be carefully explained to all the officials, and the reasons for the various rules indicated to them. If they have been selected from successful railroad men a simple statement of the situation will suffice for all time.

RELATION OF TIME AND MONEY.

There is one point that should be impressed upon the new officials, and that is that the relation of time and money is no longer what they have been accustomed to. The successful railroad man in civil life, other points being equal, is the one who operates his road the most economically. This would hardly enter the military problem, for time, and not money, is the great consideration at the crisis. The economy so commendable in a civil railway is out of place in a military railway, for the question is not How much it will cost? but is Can it be done at any cost? And in the shortest time possible regardless of the cost?

For this very reason Colonel Girouard, in South Africa, had all work in the immediate rear of the army and all quick repair work done by his railroad troops, as his civilian employees did not grasp the new and abnormal relation between time and money that the military conditions induced. My personal acquaintance with railroad men of this country leads me to believe that they would meet the new requirements instantly, though I believe that a military organization would lead to better results than civil employment.

[TO BE CONTINUED.]

INFANTRY DRILL; SOME OF ITS ESSENTIALS.

BY LIEUT.-COLONEL CHARLES J. CRANE, EIGHTH INFANTRY.



SOME of the things most essential to a good infantry drill are not properly appreciated.

COMMANDS.

The different infantry-drill regulations have explained how commands should be given to infantry. General Principle No. 8, on page 12 of the new book, contains an excellent description of the same, but we hear at almost every drill of our infantry commands such as are prescribed for use in drilling mounted men—*i. e.*, “the preparatory commands are more or less prolonged to insure their being heard; the command of execution is always prolonged.”

There is more in the manner of giving a command than is dreamed of by the great majority of us.

Commands like those properly given to mounted men will never achieve proper results with infantrymen, whose movements must be more snappy and uniform than can be expected from horses, with more sluggish intellects.

The manner of giving his commands will also show whether or not the instructor is deeply interested in his work, knows that he is right, and means to be obeyed.

The commands will be executed in exactly the same spirit which animates them. The instructor's spirit is breathed into every explanation he offers and every command he gives, and he will be understood by his men and obeyed exactly as he deserves to be.

The instructor who is himself not well instructed and is conscious of the fact will reveal the secret to his men in his first commands, and any “indifference in giving commands” will be answered by equal indifference on the part of the men.

Men cannot possibly drill well when they see that the instructor is timid, ignorant or indifferent, and they cannot be deceived on either of those points.

There must even be a cadence followed in giving commands, in order to obtain the best results. But it would be wrong to use the same cadence in giving commands in the manual of arms and in the school of the battalion, especially in those

movements which require the repeating of the major's preparatory commands by chiefs of subdivisions.

It is believed that in the manual of arms the interval between commands should be the same as the cadence required in their execution.

We have only to watch the halting of several squads, companies or battalions to be sure that the great majority of instructors allow too great an interval between their commands in such cases.

In close-order drill the best results in halting a squad or a company will be obtained by using the same interval between commands as in the manual of arms, but this interval should be at least doubled in every other case.

In extended order movements, enough time should be allowed between commands to enable the instructor to see that his preliminary commands have been understood, and obeyed.

POSITION OF THE INSTRUCTOR WHEN GIVING COMMANDS.

If the instructions contained in the book were intelligently and honestly carried out, no cause for criticism would be left.

There is no doubt that "when giving commands to troops it is *usually* best to face toward them," but it is firmly believed, that when possible, it is *always* best, and it is also believed that it is *almost* always possible to do so.

If the instructor tries to face his men in giving commands he will find that he can almost invariably do so, and if he takes the proper interest in his drill he will certainly try to do it.

Only when facing his men can he observe each mistake, note the cause, and knowing the cause, understand how to apply the needed remedy.

Using the latitude allowed him by the book, the instructor goes wherever his presence is necessary, but the average drill instructor abuses this privilege; he has always done so, and he will continue to do so until the privilege is revoked.

Except in the first instruction of recruits the instructor will rarely, very rarely, have to leave the position assigned him by the book, and to that position he should promptly return.

He is not required to stiffly look always straight to his own front. His duty requires him frequently to turn his head, and even face about, to be sure that his men understand and properly obey his commands. It is never best for the instructor to

remain motionless except to turn in his place while drilling the squad or company around him indefinitely, yet who has not seen it done many times?

Of course, the post commander can by personal supervision and numerous orders regulate the question of position of the instructor, but the result will be removed with his departure from the post, for the instructors will consider that he has no right to interfere with the liberty granted them by the book.

The book should remove the temptation which has for many years been greatly responsible for much perfunctory drilling, and should fix the position of the instructor at drill more definitely.

LOYAL SUPPORT OF SUBORDINATES.

Unless all work together the result must fall short of success, yet we have all seen silent opposition and lukewarm support shown at drill by company commanders who have utterly failed to understand the situation when errors in their companies have been pointed out by the battalion commander, and have thus shown their resentment against their instructor, who has performed only his proper duty, and, in doing so, happened to see and note what was going wrong at drill. The company commander's duty in such cases is to promptly rectify each error indicated, and this frequently includes holding to swift accountability enlisted men who stubbornly decline to be corrected, even by the battalion commander.

When a battalion commander is compelled to call attention of company commanders to the mistakes of individual men by name the proof is already established that such company commanders have either neglected their duty or have proven their incompetence at drill.

Every battalion commander understands how such silent opposition and lukewarm support on the part of his subordinates can, for a while, nullify his best efforts, and no description of such attitude is necessary.

Loyalty to a common purpose in great undertakings will hardly be located in a body of subordinates who cannot render proper support on the drill ground, but where it does exist there will be no limit to what can be done, and it should be the object of each commander to arouse such a spirit in his subordinates if possible by proper means.

EXTENDED-ORDER MOVEMENTS.

There seems to exist a disinclination to do much work in extended order. It is believed to exist in a great many instructors of squads, companies, and battalions.

The remedy lies with the post commander, of course, and he can compel his subordinates to do more drill in extended order, but it surely is not gratifying to find this necessary.

Practice in extended-order movements is so indispensable these days that there is no good excuse for ignorance thereof, and the new book has greatly assisted us by the addition of various new features to that part of the drill, thus making it more attractive to those who practice it often.

With proper appreciation of the points mentioned, our infantry would be much better drilled, and its discipline and efficiency would thereby be greatly improved.

If either discipline or efficiency be given a perfect value of 100, at least 55 per cent. of such excellent condition would be due to drill, less than half being caused by all other means used.

SAN JUAN, P. R., June 19, 1905.



WHY GENERAL BONAPARTE WAS SELECTED TO COMMAND THE ARMY OF ITALY.

BY LIEUT.-COLONEL W. E. BIRKHIMER, ARTILLERY CORPS.



THE after-career of this great man is well understood. Commencing with the assumption of the command of that army, his every act has been passed many times under the calcium-light of historical investigation, with result that the world can be said to understand the subsequent incidents of that extraordinary career, and the motives prompting those, including the chief actor, who played conspicuous parts therein.

With his prior career the case is, however, very different.

It is a fact that before this assignment General Bonaparte never had exercised an independent command in the field.

Some powerful reasons must have prompted to the assignment of any officer to such an important station as the command of the Army of Italy under these circumstances. If it be practicable, it cannot but be both interesting and professionally profitable to ascertain what these reasons were. It is believed that they can be demonstrated from well-established facts. To understand these it is necessary carefully to examine the prominent incidents of his previous military service.

He was French by adoption only; he was a Corsican by birth, which occurred at a time when France had scarcely more than a pretense to jurisdiction over that island, and, until he had grown to man's estate, his love for Corsica, even after he held a French commission, followed next after his consistent, ever thoughtful and beautiful love for his immediate family.

It need not be supposed that the conqueror of Italy of 1796 sprang forth in all the panoply of war out of nothingness. He had previously shown to many, closely associated with him, and who were discerning and unbiased, that he seemingly possessed in an eminent degree every quality that, when opportunity offered, was to astonish the world by the exhibition of his gifts.

Born August 15, 1769, he was admitted, April, 1779, when nine years of age, to the military school at Brienne, France, where he remained until October 30, 1784, when, because of demonstrated fitness, he was transferred to a preparatory school for the army at Paris, whence he was nominated, September, 1785, when sixteen years old, to a second-lieutenancy in the artillery, in which arm he served for ten years.

The Brienne school was under the supervision of monks, and therefore it is fair to presume that none of the students received the highest order of military instruction. Simplicity in living was one of the cardinal virtues inculcated, and, because of his straightened pecuniary circumstances, the enforcement of the rule must have been highly pleasing to young Bonaparte.

The stories that have been related about him while at Brienne must largely be regarded as apocryphal. One fact, however, must have been especially galling to a brave, proud, sensitive boy, and that was the distinction permitted among the students because of birth and pecuniary resources. The nobility of his family had been officially recognized by the French authorities, but that made no difference to his associates at Brienne, who knew nothing and cared less about Corsican nobility. His straightened pecuniary condition was an ever-present reality. Little wonder that the bitterness of gall was instilled into his being, to influence his entire subaltern life.

Official reports tell the story of the sum total of Brienne work. The inspector-general was pleased with him: "Constitution, health, excellent; character, submissive, sweet, honest, grateful; conduct, very regular, has always distinguished himself by his application to mathematics; knows history and geography passably; very weak in accomplishments; will be an excellent seaman; is worthy to enter the school at Paris." On the back of the certification to the Paris school was written by the school authorities: "Character, masterful, imperious, headstrong."

If the latter character be substituted for that given by the inspector, the truth, doubtless, would fairly have been told. Certainly no one except that official ever gave expression to the terms "submissive" and "sweet" as descriptive of Bonaparte's character. His mother, with the fulness of maternal affection, would not have done it, and, even in making love,

he was so ardent, wilful and tempestuous that his future wife expressed her fear of him.

He was second lieutenant five years nine months; a little over six months first lieutenant, being promoted captain to date February 6, 1792, and confirmed as brigadier-general February 6, 1794.

It need not be imagined that he had not left the impress of unusual qualities along this pathway of eight years and five months' service.

Something over six years and three months of this had been as a subaltern officer. Certainly the record does not here present him in an amiable light. There is not a word of commendation from his immediate military superiors—his captain and colonel. On the other hand, the latter had reported him for inattention to duty and insubordination. He had three leaves of absence while a subaltern, which he invariably spent in Corsica, an unfortunate circumstance from a disciplinary standpoint being that in no instance did he return to duty at the expiration of his leave, but stayed away without it, trusting to attendant facts, when presented to superior authority, to exculpate him from blame; nor was this confidence ultimately misplaced, for, although at one time cashiered, still, when the authorities finally reviewed his case, as he presented it, his course always was vindicated, at least to the extent that he never, in the long run, suffered loss either of rank or pay.

Beyond the regiment, the element of politics soon commenced to influence the treatment of the young officer; but among the officers with whom he served when with his company such a record was calculated to make a very unfavorable impression regarding his efficiency or his zeal in the military service. The truth appears to be, and it may as well be confessed, that Bonaparte was a very indifferent subaltern. He came from his mother's womb above that station, and he never could get down to it, nor could anything force him there.

He utterly lacked the social qualities that lead to good-fellowship, so essential among officers of a regiment. He confided in no one; held aloof from the society of his peers; expressed his opinions without reserve, and often with little respect for the views of others. As while he was a subaltern no occasion had arisen that enabled him to demonstrate either the soundness of his contentions or their superiority when contrasted with those of his military associates, it could not be

expected that the latter would or could regard his views, however energetically expressed, or strenuously maintained, with patience, let alone yield to them the palm of carrying conviction. In brief, he justly seems to have been regarded a disagreeable and, in the discharge of his regular duties, rather lukewarm officer.

And yet what admirable qualities he displayed in other directions! He lived strictly within his scanty means, or, when this was impracticable, liquidated his debts as soon as possible. It was no uncommon occurrence that he had only a single meal a day, or lived in the most frugal manner, taking what he thus was able to save for the education or helping otherwise of some member of his family. If his spare pennies were not thus absorbed, a favorite use for them was the purchase of improving books. He was indefatigably industrious. During much of the time he was in impaired health; the food that he could afford was not always sufficient properly to maintain a healthy man; and still such was his power of application that, when he could secure valuable books he never ceased to absorb and make their selected contents part of himself. He read with great discrimination. He sought out the rationale of history. He wished to know how governmental institutions rose, throve and fell, and why, and the same of their peoples. The same system was used in studying the campaigns and battles of great warriors. The intricacies of finance absorbed much of his attention. The books he then read, with his copious and pertinent notes, in great degree remain to this day as evidence of all this; and, as his memory was retentive almost beyond example, he never forgot anything; thus in after-years surprising men by having always at command an apparently inexhaustible storehouse of useful and well-digested knowledge.

How little this youth, whom nature secretly had so lavishly endowed, was understood by those around him, or, for that matter, except through the mists of intuition, did he understand himself! At the very time when fault was being found with him for not performing his subaltern duties, he, in that cold, distant and unsympathetic mind, was laying correctly, broad and deep, the principles upon which were to rest the foundations of empire.

Little wonder that among regimental military associates he was deemed to be, and in fact was an indifferent subaltern.

The orbits in which they revolved belonged to different worlds.

In early commissioned days his ambition, evident and boldly avowed, was in no manner so conspicuously demonstrated as in his writings. The topics dwelt upon were numerous—military, governmental, metaphysical, historical, fiction. His style was vigorous, his ideas sometimes striking in depth and practicability, and, as the years advanced, he abandoned lofty flights and dealt with things wholly terrestrial. If, however, a just estimate, measured by after-events, were sought to be placed on these early literary efforts, he furnished it in a persistent attempt, after he rose to power, to secure and destroy everything he then wrote. Fortunately, he was not wholly successful. And yet, although this cannot be mathematically shown, it does seem to be the fact that, had it not been for the use of his pen, he might never have been able to attract, as he did, the favorable attention of those special representatives of the French Government, either with the army or in Corsica, who, ultimately, either directly or indirectly, had more to do with securing him the command of the Army of Italy than any other single influence. He never was idle, and, if so situated that he could do nothing else, his ready pen helped to carry off the load of an overcharged brain. Some of his writings were published, but by far the greater part were not. A history of Corsica was written and rewritten several times. Those of his writings, however, that attracted special attention dealt with the practical solution of governmental or society questions arising more or less prominently as incidents of the French Revolution. Few French citizens indeed were either bold enough or sufficiently able to grapple with such topics at that time, and no doubt Bonaparte frequently ran great risks of slipping into the seething volcano of human passion, the edge of which he threaded. Still, he escaped unscathed, and, what was to his immense advantage, he made, by this course, friends of men who not only then, but subsequently exerted a powerful influence in the central government, notwithstanding its numerous changes. He builded with his pen far better than he knew.

It was a commentary upon the distraction, radiating from the Paris of those days, that Bonaparte, after having devoted his best effort to ameliorate Corsican affairs, was, with his family, forced to flee from that island June 11, 1793, the family

thereafter being supported as refugees by the French Government. Political conditions brought this about, the merits of which it is not intended here to go into; nor is it pretended that they are understood. Suffice it that, after having been the champion of all things Corsican, writing and revising her history time and again, after having held the position of lieutenant-colonel in her troops, and engaging as such in her military expeditions, he finally, at the age of twenty-three years, was impelled to abandon the attitude of her champion and leave her shores.

Hitherto his services in France and occupations in Corsica, had been of a desultory character; but now he was to enter upon the soldier's life-work in real earnest. It is true that, down to this time (June, 1793), he had seen no active service in the great military events in which the French Government had embarked. Yet he was by no means without military experience, having, in the small affairs of Corsica, during the few years just passed, acted a conspicuous part, and this as a leader, a position that he assumed as of right, and willingly was conceded. Nothing was lost on him in this experience that the practical soldier could derive benefit from. Moreover, he had seen many of the most stirring events of the French Revolution. He had pondered well over the transactions passing before his eyes. He was favorably known to the administration through his political services in Corsica and his pen. In a word, although in a very subordinate position—captain of artillery—he was well equipped, both professionally and politically, to act a part in those troublous times, in which however much military capacity was in demand, political orthodoxy was, as in all civil commotions, necessarily linked with it a *sine qua non* to governmental favor.

After service in various stations in the south of France during the summer of 1793, he found his way, in September of that year, to the army investing Toulon. Here was a typical republican army, commanded largely by officers only recently in civil life. In point of fact, the real commanders, certainly so far as policy was concerned, were the commissioners—civilians, sent out by the central government at Paris to keep it informed regarding the conduct of the military and the progress of affairs. One of these commissioners at Toulon, when Captain Bonaparte arrived there, was a fellow Corsican, both a personal and political friend, who doubtless, through

previous contact, had formed a high opinion of the young captain's abilities. The artillery commander, in a certain part of the siege operations, having been incapacitated by a wound, young Bonaparte was, September 16, 1793, assigned to his station. What his services actually were during this siege, considered on their military merits alone or compared with the services of others, has been a matter of great dispute, which will not be joined in here. It is easy, however, to understand how the commissioners must have been delighted with him; the forcefulness of his character, tenacity of purpose, professional resourcefulness, unquestioned bravery, his wonderful knowledge, acquired through reading, and always at the tip of his tongue when needed—all these, coupled with his loyalty to the Administration, pointed him out as one of whom high hopes might well be formed by the Government then in power. Thus was he buttressed on the political side.

On the other hand, although the very qualities mentioned above as commending him to the commissioners might, when carried to extremes, present him to his military associates as opinionated, insubordinate and graspingly ambitious, still, the general commanding the artillery at the siege, in a despatch two days afterward to the Minister of War, referred to the services that Bonaparte had rendered in the following terms: "A great deal of science, as much intelligence, and too much bravery; such is a faint sketch of the virtues of this rare officer. It rests with you, minister, to retain them for the glory of the Republic." Immediately the commissioners nominated him for general of brigade. He was confirmed February 6, 1794, and soon after assigned as commander and inspector of the artillery of the Army of Italy.

In his new field of duty he found commissioners of the central government, and official records show that the esteem in which they held him and his services was ever on the ascendent, and official reports to this effect were sent to Paris. As a result, it is fair to suppose, of this good opinion he was sent an envoy to Genoa in July, 1794, on a matter requiring very delicate handling, acquitting himself in a manner so highly creditable as still further to enhance his reputation as an astute and resourceful personality. So much for the political side in Italy.

It would seem he had fair grounds to believe that his ad-

vancement in military reputation kept equal pace. Within a month of his assignment as commander of artillery, at a council of war of the armies of the Alps and of Italy, the plan of campaign as proposed by Bonaparte was approved. It was this which, so far as any plan was given effect at all, was carried into execution that year by the latter army. Certainly it appeared that, at last, he was on the path to glory.

But now occurred one of those incidents with which civil commotions are so prolific. His particular friend among the commissioners with the Army of Italy was the younger Robespierre, but, on July 28th, while Bonaparte was on the Genoa mission, both the Robespierres were executed in Paris. Thus one of the powerful sources of his influence was swept away. Following this, due to some cause best and perhaps only known to the central government, he was deprived of his command, and, August 10, 1794, placed in arrest. As had occurred in all previous investigations when his conduct had been officially investigated, he was exonerated; he was released and restored to his command. As was the case in certain periods of our own Civil War, such instances were so common that his own experience did not, perhaps, make much of an impression upon him. He stood, every sense keenly on the alert, every faculty of the mind trained up to the point of controlling great events, ready to seize any opportunity that offered in the shifting scenes of the national kaleidoscope. Nor did he have to delay long, although attended by many distressing incidents, until the turn of the wheel carried him, equipped at every point, to the apex of fortune.

He took an active part in preparing the expedition against the English in Corsica in the latter part of 1794. His position in the artillery in Italy having, as a result of this absence, meantime been filled, and he assigned to duty with the infantry in the west of France—a transfer that for some reason he deemed exceedingly distasteful—he repaired to Paris. It is interesting to read the remarks of the commander of the army of Italy, made, perhaps, when Bonaparte left his army, and as a matter of routine: "This officer is general of artillery, and in this arm has sound knowledge; but has somewhat too much ambition and intriguing habits for his advancement." Every soldier will understand the equivocal nature of this statement, from a military standpoint. Surely it did not exhibit Bonaparte in an enviable military light, however much

his abilities may have been recognized. As illustrating the changes of fortune of the times, it is a curious fact that within less than a year the officer of whom this was written relieved him who wrote it of his command, and carried the army forward to a series of victories that the latter did not deem to be within the range of possibilities, and even the preliminary movements of which it was beyond his capacity to inaugurate. Too much fault, however, must not be found with the commander of the army for giving Bonaparte this indorsement. While acknowledging his professional attainments as he, the commander, saw them, and remarking his ambition, which, properly controlled, is a mainspring to military success, and therefore commendable, he invited attention to that other prominent feature which, with reason, superior officers hate as the greatest blemish of the subordinate's mentality—the spirit of intrigue—that going outside of official channels to further his military interests—which ever had been one of Bonaparte's characteristics, and one of the strongest levers by which he raised himself to fortune. The boy was father to the man. This was precisely in line with what his colonel, as before mentioned, had observed and referred to when, as a subaltern, he officially had reported him for insubordination.

He arrived in Paris May 10, 1795, broken in health, dissatisfied with his new field of duty, sought an inconspicuous place of abode, strenuously, but unsuccessfully, seeking to secure a revocation of his infantry assignment, and, for the reason that he could not be moved to his new field of duty, his name, in September, was struck from the list of generals on duty, although he retained his commission.

These facts show how General Bonaparte stood at this time in the light that comes down through the regular military channel. It is not for one moment to be supposed that his military associates of all grades were not impressed with that intellectual superiority, especially in professional affairs, that seemed to permeate the very atmosphere in which he moved; but as yet he had been able to furnish no test, satisfactory to them, as to whether he was a genius, capable successfully of suiting the action to the word, or merely a clever and plausible theorist. Again it may have been that his military superiors were somewhat jealous, for, it was but natural for them to demand that before concessions to his assumed great abilities be made he should, as others had been

compelled to do, demonstrate those abilities in actual conflict with the enemy. That was the plain soldier's view. Moreover, the fighting soldiers—those who in the field were bearing the burden and heat of the day, far from the center of political power—could not but feel a certain sense of disquietude at seeing the evident advance in political favor of an ambitious officer, so immensely clever in ingratiating himself with those who decided the governmental policy and dispensed its patronage, including assignments to military commands.

It is impossible to cavil at this, the soldier's course of reasoning. He arrived, indeed, at erroneous conclusions, but that was because he now dealt with the failing case—a genius, and not the ordinary man—and therefore his premises were wrong.

Such, it is believed, is a correct presentation of the strictly military side of General Bonaparte's case as he stood ready at the next step to enter with firm tread upon the pathway of that extraordinary career that has marked him as one of the greatest of the human race.

Besides the question, however, as to how he stood, judged by the strictly military standard, and by his peers of the army, there was another of vast importance at this juncture, namely, how he stood with the existing French administration. Fortunately he passed this test well. For years the officials of this central government had regarded with increasing favor his clearly demonstrated superior abilities in many directions. Its sources of information have already been adverted to, as the commissioners sent to the armies and elsewhere to keep the Paris officials truly informed regarding persons, things and events on the outside. The administration, and these, its agents, had regard only for what was best for its interests and the perpetuity of its power. For the soldier the two important questions were as to his political loyalty and his ability to beat the enemy in battle. To a considerable degree military subordination was out of the commissioners' channel of thought; and, doubtless, numerous of them, especially civilians, did not understand it; moreover, the turbulent times were not conducive to the pursuit of affairs by regular methods. Fortunately for Bonaparte, some of these officials were fellow Corsicans, and to all, Corsicans and others alike, he commended himself, first in Corsica, then at Toulon, afterward in Italy, and reports regarding his great abilities

were frequently made by these confidential agents, through whose eyes the central government saw things. It readily can be appreciated that he made a profound impression. The government sought results without weighing nicely the means of accomplishing them. If a subordinate officer low down in the scale of rank could win victories, the government was willing that he should do it, even if this caused a setting aside his military superiors. It was one duty of the commissioners to unearth such subordinates, if any there were, and in Bonaparte they thought they had found one of great promise. The indomitable industry of his life here bore fruit. He towered immeasurably superior to anybody else in knowledge derived from books, and of a nature pertinent to the topics then of most interest, and he stood ready practically to use everything he had read. He never forgot anything he saw, and was able to turn it to military advantage. A good illustration of this was furnished as a result of his embassy to Genoa. He made a study of the topography as he went along, and immediately turned the knowledge thus acquired to account in preparing a plan of campaign for the army in Italy, of which he prepared several for submission to the commissioners, and now, during his leisure, while waiting in Paris, he submitted another, and revised plan, which, having been examined, and approved, ultimately he carried into effect.

It is easy to understand how his intimacy with the commissioners, and the opportunity he thus had outside of army channels of winning his way to favor at the seat of government, should have caused his military associates, more especially his military superiors, to look coldly upon him. These commissioners were, in effect, spies upon the conduct of these superiors. The central authority at Paris saw things affecting the army and the conduct of the war, not through the eyes and reports of commanding generals, but of the commissioners. It was a condition of affairs characteristic of civil commotion. Yet thus it came about that Bonaparte, while he waited in Paris during the summer of 1795, stood in much higher military favor in the civil branch of the administration than in army circles. It also is true that each branch, the military and the civil, when the point of view that each was compelled to take is considered, was entirely justifiable in arriving at the estimate it did. Each would willingly have subscribed to the character given when he was sent from Brienne to the Paris school, eleven

years before—"masterful, imperious, headstrong"—qualities that the army believed had not made a good subordinate, as, in the nature of things, unless controlled, they cannot do; but which are necessary to highest military leadership, where the central administration, it well may be imagined, hoped they yet would be utilized. The solid foundation for this hope lay in the reports of the commissioners, and the emanations from Bonaparte's pen, more especially his plans of campaign in Italy, all which were in the governmental archives.

And yet, as matters stood, Bonaparte was a long way from assignment to command of the Army of Italy. This was not to be brought about until he had rendered a signal service in the military line to the central administration which, in its results, as it believed, had saved it from being hurled from power and saved the lives of its members; for certainly had the sections triumphed on October 5th (13th Vendémiaire), 1795, the leading members of the former government could have expected little mercy. The part that Bonaparte played in the events of this day has been a matter of dispute, and has been disparaged by Barras, a member of the Directory, and whom the Convention had placed in command of the troops to put down the uprising. It is true that Bonaparte was only one of seven subordinate generals under Barras on that occasion. But the part that Bonaparte acted was so decisive and so universally recognized by contemporaries—eye-witnesses, and cognizant of all the facts—that he leaped at one bound to the top round of administrative favor. In brief, the government felt that he had saved it. Barras' only merit lay in the fact that, to quell the insurrection, he had put the right man in the right place. In memoirs published just a century later he attempted to enhance the importance of the part he acted, and decry what Bonaparte did on this occasion; but, as has been well said, "Barras' only claim to immortality lies in the fact that he now was privileged to hold the stirrup for the great captain who vaulted lightly into the saddle."

The 5th of October, 1795, set the seal to Bonaparte's letters patent as the man of destiny. A feeling of gratefulness permeated the members of government to a degree that nothing could have generated short of a consciousness that he had saved them from the guillotine. They naturally now were in a receptive mood favorably to consider other propositions in his favor. When, therefore, the plan for the next campaign in

Italy was seriously taken up, that proposed by him, and which already had been approved, was, in January, 1796, sent to the commander there for consideration. He returned it with the remark, deemed scantily courteous, that he who planned that campaign should execute it.

It was determined that this, accordingly, should be done, and General Bonaparte, now as commander-in-chief, joined the Army of Italy at Nice, March 27, 1796.

It cannot with truth be asserted that his selection for this position was due to the esteem in which, as a soldier, he then was held by his immediate military superiors. This, notwithstanding the report in his favor of the artillery general at Toulon and the admiration and devotion of good soldiers and personal friends like Marmont, Junot, and others, whose intimate contact had enabled them the more correctly to gage his real military capacity. It was due, first, to the profound conviction that association with him had carried to the minds of agents of government of his extraordinary military abilities, to be followed and confirmed by conviction, similarly created in the minds of members of government themselves, strengthened by gratitude for the great services he was enabled, personally as well as officially, to render them at the supreme moment of their administration. When, therefore, a plan of campaign proposed by him and approved by the government was rejected by the commander of the army in Italy, it was not unnatural, under all the circumstances, that the task of its execution should have been entrusted to him who originated it.

The administration had the satisfaction of seeing its judgment confirmed beyond its most sanguine hopes regarding the military abilities of the new commander, and it was soon to realize that this was only one of his profusion of intellectual gifts. Moreover, what doubtless was less agreeable, it found him as untractable a subordinate as had previously his military superiors. No commissioners of the Directory ever were permitted to spy upon and control his movements. In the economy of nature there was but one station and rôle for which he was fitted, and that was at the head, and to govern.

REMARKS ON MANEUVERS, MAINLY FOR THE USE OF COMPANY OFFICERS OF INFANTRY.

BY CAPTAIN U. G. McALEXANDER, ADJUTANT,
THIRTEENTH INFANTRY.



THE subject of this paper was chosen before the article written on "Combined Manuevers," by Colonel Wagner, appeared in the JOURNAL OF THE MILITARY SERVICE INSTITUTION, otherwise I would not have presumed to have expressed opinions so freely after the Master of the Art of Maneuvers had spoken. But, fortunately, the subject is broad enough to admit of discussion by many minds; and observations made in four different maneuver camps may interest those who have not had like opportunities.

The object of all military training in war or peace is the accomplishment of beneficial results to the nation by armed force, and this may be accomplished by preparing each individual in the service for the duties he is performing and for the duties which may at any moment be thrust upon him.

In no place outside of actual war is it so easily possible to ascertain an officer's adaptability to the purposes of war as may be ascertained at maneuvers.

The intimate relation existing between peace maneuvers and actual field-service in war makes it imperative that, even in a fairly instructed army, the officers and men shall have received all available instruction in the peace maneuvers that they may be the better enabled to understand and know how to perform their duties in war.

General MacArthur has said that the peace maneuvers at American Lake, for example, simulated all the conditions of war except its tragedy. The tragedy is assuredly absent from the peace maneuvers, but there is also absent a few other elements. In maneuvers a game is played, in war a game is also played the stakes being in the latter case the lives and material of the opponents. In the former an umpire decides, in the latter the strongest battalions give the decision.

The thorough training of troops before participating in maneuvers or war is of the most vital concern to commanders

of all ranks, and in no other vocation in life will disaster be so quickly reaped from imperfect or total lack of training as when the contest of arms is on.

Like every human institution maneuvers may be criticized, and, as usual, the irresponsible are the loudest; but it may well be remarked that responsibility has a chastening and purifying effect in maneuvers, as in any other part of army administration.

I will divide my subject into the following subheads for presentation in sequence:

1. Preparation at the Home Station.
2. The Assembly and Organization in Camp, Sanitation, etc.
3. Tactical Instruction, Drills and Ceremonies.
4. The Umpires, with Reports of Operations and Discussions.
5. Breaking Up and Return to Home Stations.
6. General Remarks.

Under the heading "Preparation at the Home Station," it may be said that it is a useless and senseless waste of time and money, with no beneficial result, to attempt maneuvers with uninstructed troops during the time usually allotted or permissible for the militia.

In the instruction preparatory to maneuvers, it must be assumed that all the movements prescribed in the Drill Regulations have been taught and executed until they are understood by all officers and men; this must be taken as the alphabet of instruction. If officers and men cannot execute all necessary close and extended order drills, understand ceremonies, be able to take formations for advance and rear guard and outposts, know how to go into camp as laid down in the Drill Regulations, they should never be considered as available for maneuvers. All of this is needed to secure the necessary cohesion in command before beginning instruction in minor tactics.

The following is suggested as a program of instruction for infantry:

1. Instruction of the squad on varied ground, as in the Drill Regulations for Infantry.
2. Instruction of small patrols and scouts, insisting upon secrecy and prompt transmission of important intelligence and that a patrol is never to fight except under unusual circumstances, and then only in self-defense or to effect an important capture.

3. Contact of patrols (same company).
4. Advance guard drill of infantry.
5. Formation as rear guard and as flank guard.
6. Establishment of company outpost (Cossack).
7. Company acting alone in attack or defense, also in battalion, if possible.
8. All officers and non-commissioned officers to become able to construct road sketches, and officers to become proficient in making short, concise reports, in military language, of the operations of their commands in anything they may be required to do.

In the above outline, the taking advantage of terrain to secure shelter should be carefully taught, both as to natural features and artificial shelter.

If officers and men meet the physical requirements, and all of the foregoing has been thoroughly done, the organization may be considered as a unit which may be profitably used in combined maneuvers.

Before proceeding to the maneuvers, each man should have the necessary ordnance, equipage, toilet articles and clothing to include one suit of blue and one of brown or khaki.

Ordnance to consist of rifle, bayonet and scabbard, belt and fastener, gun sling, jointed ramrod, oiler, haversack, and canteen with straps, knife, fork, spoon and tin cup.

Equipage to consist of shelter half, poles, pins, rope and barrack bag, which latter is to be used to carry materials not possible to carry in roll.

Clothing to consist of two blankets, one poncho, fatigue suit or khaki suit, one campaign hat, one pair leggings, one blue uniform (old style), two pairs shoes, one double-breasted shirt, one khaki shirt, three suits of underwear, six stockings.

Toilet articles to consist of three towels, cake soap, comb and brush, tooth-brush.

Under the heading "The Assembly and Organization in Camp, Sanitation, Etc.," it may be presumed that orders will have been issued from the Division Headquarters to each command providing for its transportation, subsistence, time of departure from home stations, expected time of the arrival at the maneuver camp, the brigade to which assigned for maneuvers, what camp and garrison equipage is to be brought with troops, what means of transportation and supplies, etc. Each company should be provided with one mess chest for supplies and a small box for mess pans and kitchen utensils, camp kettles being carried loose. Two iron uprights with hooks to

hold a cross-bar should invariably be taken, whether or not field ovens are furnished. Embarkation and disembarkation, entraining and detraining, words so full of mystery to the uninitiated, is a matter of so little brain-force expenditure that they need not be discussed.

Upon arrival at or near the camp a staff-officer should at once conduct an officer of the command to the camp site to be occupied and point out previously marked lines for tents of officers and men.

Sinks having been provided, the first care in camp is the immediate establishment of the cook tents, the making of coffee and preparation for the first meal in camp, remembering that a contented stomach is to most men the first requisite to a contented mind.

The camp is pitched and tents arranged exteriorly and interiorly as has been prescribed in orders previously issued. The command should then be furnished with orders as to sanitation, disposal of refuse, guards to be maintained, the routine warning, formation and service calls to be sounded, etc.

Each commander should be also at once furnished with maps of the region to be operated over, the schedule of exercises, instructions for maneuvers, and as soon as practicable with a roster of troops. The first duty of the commander is to call on the next higher commander and report the arrival of his command.

Orders from the headquarters maneuver division should issue announcing place and time of issue of rations to the various commands and the daily issues of beef and bread, the names of the chief and senior umpires, the method of distinguishing members of general staff, accredited attachés, umpires, distinguished visitors, accredited correspondents; the description of the various flags of division and brigade, and orders concerning depredations by troops, etc.

Under the heading "Tactical Instruction, Drills and Ceremonies," my sense of what is the best method to pursue makes me distinctly opposed to much of what I have seen crowded into each of the four maneuver camps attended. It is a statement of fact and not of opinion that combined peace maneuvers are new to our nation and its officers, and that the first steps are liable to be uncertain and faltering; the temptation to overcrowd the program of instruction has without exception caused maneuvers, exercises or drills to be dropped out. Par-

ticularly was this dropping out and change of the schedule noticeable at Camp Atascadero, California. Every officer whom I have heard express an opinion has recommended that maneuvers take place on alternate days. As this would permit of but about four or five maneuvers while the militia were in camp, it at once becomes most vital that the problems be set forth with the utmost particularity and that verbal instruction concerning each be imparted to both officers and men before their execution in the field. In the rush at a maneuver camp, as they have heretofore been run, there has never been time for the proper preparation of orders or plans by the commanders, and usually orders have been transmitted to subordinate commanders but a short time before or at the beginning of a maneuver, and the exercises have followed each other at such a short interval that commanding officers and umpires have been unable to properly prepare their reports before being called upon for other work. Each maneuver should have enough time set apart for it that thorough preparation of orders and plans be made, that these be transmitted to the command affected and that personal tuition be given in all matters wherein secrecy is not essential. After each maneuver there should be time enough allowed for the proper preparation of reports of umpires and commanding officers and the preparation of the chief umpire's report. The chief umpire's report preceded by those of the two superior commanders should be read before a general assembly of all of the officers and then be followed by a general discussion open to all. In this manner should each maneuver be concluded. Then the next maneuver could be taken up and disposed of in a similar manner, the work of the maneuver to follow being taken up by officers as soon as each has completed his work on the next preceding.

The tactical instruction given in the problems should be followed on the succeeding day by drills or ceremonies, or where defects have been discovered in the main problem by a minor problem of the same kind to teach the correct idea to both officers and men. Nothing should be done which has not a forceful reason for being done, and nothing done should be allowed to pass unless properly done; a correct understanding must be had by every element of what is required of it, and each element must be compelled, if necessary, to perform its proper function. The problems prescribed for solution should have a practical bearing and must, to be of value, have every

possible similitude to actual war conditions, advance and rear and flank guards, outposts, convoys, with attacks on each, passage of defiles, choice of defensive lines with attacks on them (march and deployment of the larger units for the benefit of their commanders). In each and every problem requiring the movement of a command require its transportation to accompany it, thus having commanders feel the responsibility and the drawbacks of impedimenta. Men should be instructed that one canteen full of water should be more than sufficient for one day if self-denial and judgment is used. The establishing of water-tanks all over a maneuver ground is an unwise departure from actual field conditions.

One permanent camp or two camps do not fulfil the ideal conditions, but for the instruction of militia are perhaps better than moving over a large territory. It serves the end of more thorough instruction of officers and men in the matter of learning the ground, and has the advantage of giving a refuge at night where men may recuperate and officers be enabled to receive theoretical instruction.

One large camp is preferable to two small ones on account of the *instruction* and *assembly* of the officers. Tactically two camps are better, but for the theoretical instruction of officers, the one large camp is preferable.

The majority of officers and men have never had thorough instruction in field work. While it may be said that any instruction according to correct principles is good, it is only by supplementing the theoretical part with the practical working out the thing on the ground that any lasting good can be obtained. It is unquestionably true that the higher commanders are those who profit most by maneuvers, but it also opens up a field for the activities of company officers in which they may make fine records for themselves and records that will be noticed, remembered and appreciated. Officers learn the value of aggressiveness and of celerity and secrecy of movement. They learn that their patrols must secure information without themselves being seen, they soon find out that an advance guard is for the purpose of clearing the way for the main body, and they push forward with energy; they learn that timidity causes annoying delay and possible disaster, they soon learn that it is impossible to go too fast before contact and that it is almost impossible to go too slow after contact is thoroughly established against large bodies.

What has usually obtained at the maneuvers has been a tardy and timid advance and a precipitate attack on gaining contact, which is the direct opposite of correct procedure. This matter is set forth in memorandum instructions No. 1, First Brigade, Provisional Division, Camp Atascadero, California, August 10, 1904, with general comment by Colonel Wagner on pertinent associated subjects.

A memorandum was partially prepared with especial reference to the cavalry and field-artillery, but was not finished and issued on account of lack of time and because of the ease of giving verbal or special written instructions. It may be laid down, as an almost invariable rule, concerning artillery to *never* divide batteries into smaller divisions and then separate them, unless on recommendation of the artillery commander. Let the artillery commander use his arm together or separated only by such distances as may be consistent with fire control.

In maneuvers, as in war, there springs up a feeling of sympathy, camaraderie and mutual respect between the different arms of the service, and while it is true that as infantry advances or retires it takes along with it the artillery and cavalry, yet there are many times when the infantry can make use of the cavalry and artillery, and both of these, when circumstances require, may rely wholly upon the infantry.

At peace maneuvers can best be learned the functions of each arm and their mutual interdependence. At the maneuver camp is found the best surroundings for dispelling jealousies and prejudices engendered from lack of association among the officers of the three great arms, infantry, cavalry and artillery. To these three arms all things else in the service are mere accessories, desirable, but not of absolute necessity.

The drills and ceremonies at a maneuver camp should be executed under observation of inspectors detailed especially for this purpose and who should report to the brigade commander or the division commander in a manner similar to that prescribed for umpires.

Under the heading "The Umpires, with Reports of Operations and Discussions," a volume might be written, and all be useful. Umpires should be selected only from officers of much experience and proved ability, and preferably from the higher grades, certainly not below the grade of captain, that the weight of authority may be felt and accepted without question. Of the officers selected as umpires the senior should

be the chief umpire and the next two senior should be the senior umpires of the opposing forces, and the other umpires should be assigned from day to day to either side, thus securing a rotation beneficial to themselves and justice to the command to which assigned. The chief umpire should be one of the most capable of officers, particularly as a tactician, free from bias, tactful, dignified, resourceful, and who possesses a mentality broad enough to cover all the heterogeneous elements with which he will have to deal, yet with courage to state conditions as they are found or are developed. The senior umpires should likewise possess similar qualities of mind with high professional attainments. No one is more in need of a dispassionate and unbiased mind than an umpire. The careful instruction and supervision of Colonel Wagner at West Point, Kentucky, and Fort Riley, Kansas, made those maneuvers practically free from the bias of umpires. One of the most noticeable features in both the maneuvers at American Lake, Washington, and Camp Atascadero, California, was the active partizanship shown by many umpires. Nothing could be more injurious and wrong. The umpire must note conditions, giving particular attention to numbers, dispositions, morale, the effect of unexpected contact with hostile troops, how officers and men acted when surprised, the effect of fire, formations taken, etc. The rules for umpires have been published by the War Department. From observations at the maneuvers of 1903, there was seen to be *entirely* too few umpires; this was true at American Lake and at Manassas, and but for the unusual appreciation of this fact by him, and the timely and urgent requests of the division commander for officers, the maneuvers at Camp Atascadero would have irreparably suffered.

The uniform of the umpires should be so distinctive that they could be recognized at long distances, and the latitude allowed them in moving from place to place should be greatly increased.

An experimental blank report for umpires had been used by Colonel Wagner at West Point, Kentucky, and Fort Riley, Kansas, 1903, and was subsequently used at American Lake, 1904. This blank was not considered satisfactory by him, and effort was made to improve it. After much effort under difficulties at American Lake and immediately after my return therefrom I prepared a blank, and submitted proofs to the

chief umpire, Camp Atascadero, California. The blank was accepted, and with slight modifications was used at that camp. An umpire's note-book, originated by me, was also accepted and used. A recognition of the value of the report blank and the note-book is made on page 20 of the Report on Joint Encampment, etc., Camp Atascadero, California, August 13 to 27, 1904, without, however, any particular recognition of the originator.

Umpires should prepare their reports in duplicate, one copy going to the senior umpire of the force and the second copy to the commander affected. These reports are summarized by senior umpires and submitted to the chief umpire for his report.

At a discussion of a maneuver, at which all officers should assemble, the following should be read: The general and special situations of the problem, the orders issued to the forces, the reports of the two opposing commanders and the report of the chief umpire. The reading of these papers to be followed by a general discussion. The methods used at American Lake and at Camp Atascadero were far from satisfactory. We wish to hear what the chief umpire has to say in his report and not verbal expressions from other umpires unless they are called upon to elucidate obscure points that may be in issue.

An umpire should invariably be furnished with a mounted orderly; this is a question not open for argument, if *efficiency* is the object desired.

Under the heading "Breaking up and Return to Home Stations" it may be said that it is but a reversal of the movement to the camp with certain duties as to condition of ground, its police etc., which need not be gone into here.

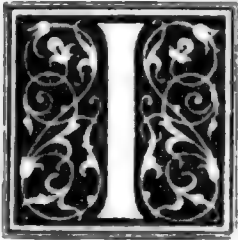
Under the heading of "General Remarks," it may be said that combined maneuvers are the best device known for instructing officers and men in their duties for war, inexperience not being confined to the lower grades.

Maneuvers should not be held twice on exactly the same ground, hence permanent sites are not recommended unless of extraordinarily large extent. I consider this a tremendously important fact, just beginning to be appreciated, in view of the proposition to purchase sites, so nearly carried out last year.

All forces should engage in maneuvers on an average of once in three years, that every man who joins the colors may at least once experience the nearest approximation to war conditions possible to give him in time of peace.

THE ORGANIZATION, MAINTENANCE AND TRAINING OF FIELD-BATTERIES IN THE ORGANIZED MILITIA*.

BY LIEUTENANT JOHN F. O'RYAN, FIELD ARTILLERY.
NATIONAL GUARD, S. N. Y.

N this paper it will be attempted to show the great importance to the country of maintaining a field-artillery approaching the immediate demands of a state of war, the improbability of Congressional action providing for this in the regular establishment, and the possibility and means of creating and maintaining it in the organized militia. To do this in a manner to be of practical value, it is evident that the subject must be considered in detail, rather than to indulge in argument leading to general conclusions which might well be termed platitudes. Therefore in its proper place and under the headings hereinbelow set forth, will be pointed out in detail the means and methods of organizing, maintaining and training a suppositional battery of field-artillery in the militia and the state of efficiency which it can be brought to under the ordinary and possible conditions existing in the States; for it follows that if one unit of field-artillery under such conditions can in the militia be brought to the state of efficiency herein claimed as possible and attainable, then in the same manner *n* batteries can also be raised to the same standard of efficiency.

The subject for convenience and orderly treatment would seem to be properly divided as follows:

1. *The importance of the rôle of field-artillery in the past—a retrospect.*
2. *Its importance on our next battle-fields.*
3. *The necessity for the field-artillery to be existent and efficient at the outbreak of war.*
4. *The inability of the Regular artillery to supply the war demand.*

*"The subject [The Militia] is of so much moment in my estimation as to excite a constant solicitude that the consideration of it may be renewed until the greatest attainable perfection shall be accomplished."—Washington, Messages of the Presidents, Vol. 1, page 184.

"Nor should we now, or at any time, separate until we can say we have done everything for the Militia which we could do were an enemy at our door."—Jefferson, Messages of the Presidents, Vol. 1, page 320.

5. *Recourse to the organized militia and its present inability to meet the emergency.*

6. *The formation, maintenance and training of an efficient militia field-battery.*

- a. *Location of the battery,*
- b. *Housing and quarters.*
- c. *Officers—Physical and educational requirements, remuneration,*
- d. *Enlisted personnel, pay,*
- e. *Discipline,*
- f. *Materiel,*
- g. *Horses,*
- h. *Training of the battery and the standard of efficiency attainable.*

I. IMPORTANCE OF THE RÔLE OF FIELD-ARTILLERY IN THE PAST.

A student of military history reading the many narratives of the conduct of warfare and the fighting of battles by civilized nations must of necessity be impressed with the steady increase in the importance of the rôle of artillery from the time the first cannon were used at Crécy in 1346 to the fall of Port Arthur in the present year. At first regarded like every innovation with doubt and skepticism as to its value, we observe the first great stride toward its acknowledged effectiveness made at the battle of Marignano in 1515, where the crude guns of the French won for them a brilliant victory over the Swiss forces. Thereafter the tactical uses of artillery varied with the several great military leaders who occupied European attention, until about the year 1765, but it may be said that throughout this period the artillery arm came more and more into favor and use. In 1765 the great improvements and changes introduced by Gribeauval in the French artillery made so marked an advance that he has been termed the father of modern field-artillery. (Wagner's "Organizations and Tactics," p. 304.) The results of his work made possible Napoleon's wonderful uses of artillery in his campaigns. Instead of the sporadic boom of the rude cannon at Crécy, we now hear the continuous thunder and roar of the artillery of the Guard at Friedland, Wagram and Borodino as it prepares the way for the advance of the Emperor's legions. Yet the Napoleonic era was not the culmination of artillery improvement. Since his time we observe the same onward march of progress, but at an increased gait, for the shrapnel and rifled gun now came into use. At the time it was predicted that the destructive effects

of shrapnel would be so great as to make warfare impossible; but while its use had not the augured result, it greatly increased the importance of this arm on the field of battle. The work of the field-artillery in our Civil War needs no comment in this connection. But if the artillery had reached a great height in military esteem at the termination of the American Civil War, what should be said of it as a result of its record in the Franco-Prussian War? In this conflict we observe the artillery occupying the center of the military stage. Moving with the vanguard it was on occasions the first in the fight. At St. Privat, it will be remembered, the Prussian artillery was for a time in action nearly a mile in front of the infantry line. In such regard was the arm held that the proportion of artillery to the other branches of the service steadily increased as the war progressed. The number of batteries engaged seemed often to be limited only by the impossibility of finding positions for them all. "Only such batteries were left in reserve," says Hohenlohe, "as could find no room in the Gravelotte position. Seventy batteries, or 420 guns, had thus commenced firing before the masses of infantry were sent forward to the decisive attack." (Hohenlohe's "Letters on Artillery," p. 43). Referring to the battle of Sedan the same officer says:

It must be sufficient for me to say that all the generals, and particularly those who command the artillery, were filled with the idea that as much artillery as was available should be employed as soon as possible, and that none should be kept in reserve. * * * * * Everywhere the artillery pushed to the front quite close to the enemy, even into the line of skirmishers. * * * * * There were thus five principal groups which, *with their 540 guns*, fired at the same time at the same target.—Hohenlohe's Letters on Artillery, p. 51.

In the South African War the heavy guns of the Boer forces in the first period of the war were of great value to them, and the British Army for heavier *materiel* had to avail itself of the naval guns or improvised carriages. When the Boers lost their artillery the end came.

With respect to the part which the artillery has played in the present war in the Far East, the professional observations of our own and foreign military observers are not yet available, but from all that can be learned from non-professional sources, it would appear that the hostilities in the East con-

stitute a decisive and tragic illustration of the dominant importance of the artillery arm.

2. THE IMPORTANCE OF THE ARTILLERY ON OUR NEXT BATTLE-FIELDS.

This can be but a prediction based upon military history, but to one who had even glanced through the records of the past the facts are convincing that for an army without a numerous and efficient artillery to engage in war with any of the great powers would be disastrous. Two quotations under this heading will suffice to support this conviction.

With the enormous range of the present artillery the guns can turn their fire upon many parts of the hostile line without even changing their position, and this great mobility and the destructiveness of their projectiles have further added to their power to such a degree that it seems probable that field-artillery will in future wars *play a part compared with which even its greatest achievements in the past will seem insignificant.* (Wagner's "Organizations and Tactics," p. 333.)

Up to the present the artillery fight which precedes each crisis of the battle has not been considered as of a decisive, but only as of a preparatory character, or at the most it has been held to mark the development of the action. It will probably be otherwise in the future since shrapnel and double-walled shell produce such a murderous effect *that the fight may be considered as decided in favor of that side whose artillery has overcome that of the enemy in the artillery fight and can now turn the full weight of these projectiles on the other arms of the enemy.* (Hohenlohe, p. 275.)

3. NECESSITY FOR FIELD-ARTILLERY TO BE EXISTENT AND EFFICIENT AT OUTBREAK OF WAR.

The American public mind, concerning itself with a military topic, turns naturally and instinctively for instructive material to the Civil War. That great conflict will be for years to come a valuable field for military study; but with respect to preparedness for battle, it furnishes an example of necessary tactical inertia at its outbreak, which should be appalling instead of reassuring when we contemplate the possibilities. The unpreparedness of the North was fortunately neutralized by the unpreparedness of the South. Let us consider the difference between our military preparedness in 1861 and that of Prussia in 1866 and of Germany in 1870. Fort Sumter was

fired upon April 12, 1861, yet more than three months elapsed before the Federal Army engaged the Confederate forces at Bull Run, and even then suffered for its lack of preparation and training. In 1866, however, the war between Prussia and Austria was commenced, the engagements and battles of Trautenau, Burkersdorf, Skalitz, Gitschin and Königgrätz fought and the war terminated, *all in a period of seven weeks*. On July 19, 1870, France declared war against Germany. On August 2d, or fourteen days later, 30,000 French crossed the German frontier and took the town of Saarbruck. Two days later occurred MacMahon's defeat at Weissenberg, and on the 6th of August, or *eighteen days* after the declaration of war, witnessed the great battle of Worth. The existing hostilities in the Far East further illustrates the quickness with which blows are dealt the enemy after the rupture of friendly relations.

Nations like individuals are periodically called upon to protect and defend their interests, and at times their very existence, by force. To do this successfully they must be prepared in all that goes to make that force a speedy and effective agency. If hostilities must be entered upon speedily after the declaration of war, the army to be effective must have an efficient artillery. To be efficient the artillery must be numerous, well officered, well equipped, well disciplined and skilled in the use of its weapons and in the care and handling of its horses. Now what is the minimum of time within which a number of such batteries can be produced after the outbreak of war? It is comparatively a simple problem to produce in peace times two field-batteries from one regular battery. The officers are divided between the two organizations, as are also the non-commissioned officers, the drivers, cannoneers and horses. Additional regular officers are assigned to complete the required number, new equipment is issued to one of the batteries and recruits and horses are sent to both to fill up to the limit. The problem is similar to that of bringing two batteries on peace footing up to war's demand. The officers are competent, all important positions in the batteries are filled by the old soldiers, practically every one of whom becomes an assistant instructor more or less valuable in educating the new men. In the same way the green horses are trained not only by the men, but by the nucleus of old horses. In an incredibly short time the two batteries are ready for service.

Batteries in war time have had to refit to this extent as a result of casualties. At La Bourget on December 24, 1870, there was not a horse in the Fourth Light and Fourth Heavy Batteries of the German artillery which had not received at least a slight wound. At Flavigny, two horse-batteries of the German corps artillery lost 139 horses, or 70 per cent. per battery. Referring to the same battle, Hoffbauer says: "Some of the German batteries lost all of their officers, others all or nearly all of their horses, while a few lost nearly three-quarters of their men." (Wagner's "Organization and Tactics," p. 327). There were many Civil War instances of high percentage of battery casualties familiar to all. In all such cases, however, there was left a nucleus with a name and traditions, a trained personnel and an *esprit de corps* with which to weld the new men and horses into an efficient new whole. But how different is the problem when many wholly new batteries are to be organized. The governor of one of the States, upon the outbreak of war, is asked to furnish, say, ten field-batteries. The batteries begin by being handicapped because of the high percentage of incompetent officers among those who would be commissioned. That would be the first disheartening setback toward efficiency. The men being practically all recruits and the horses all green would add to the difficulties of the problem. The men of the batteries must now be instructed and trained in horsemanship on green horses, and in grooming, feeding and caring for them; in trumpet calls, saber signals, harness drills and care of harness, driving drills, school of the battery, pistol practice, care of the breech mechanism and of the pieces, in field repairs, in estimating distances, in the use of the range-finders, telescopic sights, fuses and tools, in code signals, entraining and detraining the battery, loading wagons, making and breaking camp, interior economy, cooking, camp sanitation, minor practical problems in exterior ballistics, hasty demolition, and elements of artillery-field fortification. Surely no artillery officer will claim that a number of such aggregations of men, horses and equipment can be molded into efficient batteries of field-artillery, capable of taking the field against the enemy in less than six months' time. Such organizations could therefore at best but constitute an inchoate reserve to be utilized when developed and prepared, if at that time the war had not terminated.

If our next war is to find us in a state of preparedness, our

field-artillery must be existent and efficient at the outbreak of hostilities.

4. INABILITY OF THE REGULAR ARTILLERY TO SUPPLY THE WAR DEMAND.

In a war of any magnitude in which the military forces of the nation would be called upon to participate, the number of the field-batteries required would not be less than two hundred, but probably many more. It has been mentioned that the Germans in a single battle (Gravelotte) placed in action seventy batteries, and at another (Sedan) ninety batteries, against the French. The total number of field-batteries in the German Army at that time, including the general reserve, is not at hand, but it was considerably greater than the number herein mentioned as a probable minimum for our army in war time.

The Japanese maintain in their regular artillery 114 field-batteries. The German regular field-artillery consists of 540 batteries with approximately 4,000 officers and 90,000 men. The Russian government planned to have 1,000 six gun batteries by the end of 1903. (Notes of Military Interest, War Dept., 1901.) *In our regular army we have but 30 field batteries.* When we keep in mind the gigantic disparity between this handful of artillery and what we would need in war, it must be apparent that the regular artillery even as a nucleus, would almost be lost. Moreover these 30 batteries are not all light batteries, for this number includes the siege and mountain batteries of the army.

Under the preceding heading we have considered the impracticability, under modern war conditions, of organizing a number of efficient volunteer batteries after the commencement of hostilities. The rapid expansion of the army field-batteries into double the number of efficient batteries, while practicable in peace times as we have noted above, could not be so readily accomplished in war time, for these reasons. The batteries would be on a peace footing and would have to recruit up to war footing in both men and horses. This influx would impair efficiency for a time, and would give the officers and non-commissioned officers all they could do to get these additions up to standard before taking the field. The regular artillery could not supply the officers for the new batteries thus created. Upon the outbreak of war, with the increase of the army,

a great number of general and field-officers would be created from among the regular artillery-officers. Thus most of the batteries would promptly lose their captains who would become field-officers, some of them taking command of volunteer infantry regiments, others of coast-artillery districts and of field-artillery battalions. It is evident that by reason of promotions, assignments, volunteer commissions and details, the regular field-artillery would not only be unable to furnish an appreciable number of officers for new batteries at the outbreak of war, but would, in fact, be sadly in need of officers to replace those lost as above. At this date, six years after the Spanish War increase in the regular artillery, we hear constant complaint from army sources that the artillery has not yet fully assimilated the influx of commissioned war appointees. Under these conditions would not such an expansion of the regular field-artillery simply have the effect of substituting sixty batteries of mediocre efficiency for half that number of batteries prepared to take the field and effectively fight their guns? And in any event would not the field-artillery so increased still constitute but a small nucleus of the requisite field-artillery force?

5. RECOURSE TO THE ORGANIZED MILITIA AND ITS PRESENT INABILITY TO MEET THE EMERGENCY.

Perhaps the unpreparedness for war of the militia field-artillery as a whole can be most readily illustrated by reference to a memorandum of Colonel Parker on the Armament of Militia Artillery, which appeared in the September, 1903, number of the JOURNAL. It is as follows: "As a result of the recent inspections the following has been found to be the number and kind of guns now in possession of the Militia:

Gatling gun, caliber .45.....	75
Hotchkiss gun.....	9
Hotchkiss revolving gun.....	1
3-inch muzzle loading rifle	34
12-pounder Napoleon.....	41
3.2-inch B. L. R.....	73
Naval Gattling.....	1
Gatling gun, cal. 30.....	2
Colt's automatic gun.....	1
3-inch naval howitzer.....	2
6-pounder brass gun.....	2
6-inch B. L. R.....	3

Eliminating from consideration this entire assortment of weapons, except the 3.2 B.L.R., we find that the militia of the country have approximately the *materiel* for but eighteen four-gun batteries. But even these do not constitute efficient fighting agencies without a trained personnel and proper motive power. As to these, Colonel Parker says that many batteries of the militia have but a dismounted training, because few States will spend the proper amount for horses. In some States, owing to the cost of ammunition, *the men never see their guns fired*.

It is probably not underrating the militia artillery too much to say that there are not more than half a dozen batteries throughout the entire country which could be prepared for active service in any reasonable length of time.

What is certain is that the militia field-artillery at the present time is wholly unable to meet the emergency of war.

6. THE FORMATION, MAINTENANCE AND TRAINING OF AN EFFICIENT MILITIA FIELD-ARTILLERY.

a.—Location of the battery. No matter what intelligence, spirit or tactical ability a battery commander may possess, he is, as to the material means with which he is to work, limited by the amount of funds which the State or Government will furnish to obtain the same. The question of finance is therefore the first necessarily considered. In the State of New York it fortunately furnishes no question. This State has been liberal in the appropriation of funds with which to house the various commands of the State forces. Under the law of New York State it is the duty of the city of New York to provide for the construction and maintenance of armories for all commands quartered in that city. The spirit in which the city of New York has undertaken this work may be noted from the following table showing the cost of land and of armories for the several commands stationed in New York City. These figures may be of interest to the militia throughout the country:

COMMAND	LAND	BUILDING	TOTAL
Seventh Infantry.....	Owned by City	Built by Regiment	
Eighth Infantry	Owned by City	\$300,000	
Ninth Infantry.....	\$437,000	342,000	\$779,000
Twelfth Infantry.....	208,000	290,000	498,000
Thirteenth Coast Artillery.....	Old (figures not at hand)		
Fourteenth Infantry.....	Same		

COMMAND	LAND	BUILDING	TOTAL
Twenty-second Engineers.....	265,000	\$318,000	\$584,000
Twenty-third Infantry.....	Owned by State		
Forty-seventh Infantry.....	Owned by State		
Sixty-Ninth Infantry.....	792,000	606,266	1,398,266
Seventy-first Infantry.....	445,000	617,300	1,062,300
First Battery F. A.....	116,000	170,900	286,900
Second Battery F. A.....	In temporary quarters owing to fire		
Third Battery F. A.....	Old (figures not at hand)		
Troop C.....	43,500	423,000	466,500
Squadron A.....	350,000*	186,000	

These buildings are architectural ornaments which adorn the city. They are heavily constructed, and in most instances would furnish secure places of refuge. Most of them are equipped with all modern conveniences and have elevators, electric lights, shower baths, gymnasium, library, rifle range, magazine, kitchen to cook for entire command, containing full equipment and latest devices of the modern hotel kitchen, refrigerating rooms, etc. The armories of the mounted commands have in addition tan-bark ring, stalls, feed rooms, harness and saddle rooms, workshop with full line of tools, lathes, etc. The business acumen of the city of New York, in thus seeking to better in every way the efficiency of that portion of the militia of New York quartered within its limits, might well be followed in other States.

The field-battery in the militia should be organized and located in the outskirts of a city or large town. Every militia command must of necessity be recruited from the population in the vicinity of the armory. The greater this population, the greater should be the number of applicants for enlistment, and the greater the number of such applicants the stricter may the battery commander be in his selections. The duties of the personnel of the modern battery are so numerous and diverse, and in many respects so technical, that a certain percentage of the men should be skilled mechanics and machinists. These are more readily obtained in large centers of population. Other men would be selected for the possession of intelligence desirable in connection with the use of range-finders, sights and instruments, or because of the probability of their becoming good gunners. There are further reasons for such location which will be considered under the heads of "Personnel" and "Discipline." Some objections, however, are to be made to the city location. The most important training of the bat-

*The armories of the Eighth Infantry and Squadron A are on the same plot of ground; it cost \$350,000.

tery must be had in the field. It is only by constant practice in the field under conditions approaching actual service that the battery may acquire any real fighting efficiency. The preparation for action, formation of lines, selection of position, of cover for the reserve, estimation of ranges, target-practice at known and unknown ranges and at fixed and moving targets, construction of gun-pits, preparation of the foreground, co-operation of the support, the supplying of ammunition from the reserve, same from the train, the selection of and advance to the new position, retirement, marches, bivouacs, etc., cannot be practiced in an armory. Neither can they be practiced in the streets of a city. In the militia, owing to other demands, as little time as possible should be lost in going to and returning from the practice ground. Therefore if the field training of the battery were alone considered it would be desirable to locate its armory in some sparsely populated county of the State possessing a diversified *terrain*, where the command immediately upon leaving the armory would be in the field of its exercises. It will, therefore, be found expedient to compromise between these extremes and to locate the armory for the field-artillery in the suburbs of a large town or city where the proper material for recruiting can be drawn upon, and where a short march of a mile or two will take the battery to the open country. In such location also land will be much lower in price than in the heart of a city. This may be illustrated by the fact that the armory of the First Battery, N. Y., located in Sixty-sixth street, near Central Park West, which is in the heart of the Borough of Manhattan, stands upon a plot of ground 174'x100', for which the city of New York paid \$115,000. For this same sum a tract of land more than twice as large can be purchased on the outskirts of the city, thus providing the battery with a drill hall in which more than a section can drill, and so located that a short march therefrom will place the command in the field.

b.—Housing and Quarters. The location of the armory having been fixed in the suburbs, we now come to consider the building itself. The drill shed, or ring, covered with glass and metal roof on steel arches, would occupy most of the plot, and should not be less than 200'x300' in area. The stable, occupying the floor beneath the ring, should be light, with ample air space, and should have stall accommodation for at least one hundred horses. In most armories the pistol range is purposely

so shut off from the rest of the building that the sound of the firing is scarcely noticeable a short distance from the firing-room. In this connection an innovation is suggested which would seem of practical value. This is that the range be located on the ground floor with the stable, and so arranged that the horses get the full sound of firing. If military history demonstrates one fact, it is that in war great results have been influenced by small incidents, and that these incidents were most often preventable if peace training had been practicable enough to provide against them. What is the efficiency of a militia battery possessing horses highly trained in the drill if amid the noise and excitement of a riot they become so frantic as to be unmanageable? Yet similar conditions have again and again existed in warfare. Battery horses should be accustomed not only to gun fire, but to the more annoying and nerve-racking sound of smallarm fire. Horses that were terror-stricken by the sound of pistol firing in our armory paid little or no attention to it after a few months of target-practice over a short unenclosed range in rear of the stalls, and this, although the firing reports were accentuated by reason of the echo.

Pistol practice should be much more practical than as now conducted. With an armory of the size above prescribed there would be space for a pistol range at least fifty feet in width. This would enable the practice to be had at moving silhouette targets. If we reflect that the use to which the pistol is put by field artillerymen in active service is principally individual self-defense, the need of much practice at moving targets with rapid fire will be apparent. The present system of allowing unlimited time for each shot is of little value except as elementary work. On any conceivable occasion when the battery as such would use the pistol, there would be great confusion, rapid movement of "targets" and rapid firing. The only way to effectually prepare for this occasion is to have the practice conditions approach *its* conditions as nearly as possible.

The firing line on the pistol range should be so arranged that one or two of the guns could be conveniently run thereon for subcaliber practice.

The gymnasium need not be elaborately fitted. They are not used to any great extent, at least in the commands about New York City. The setting-up exercises are compulsory, and, aside from these, what little time there is to be expended about the armory outside of the drills and indoor practice, the men,

if they go in for athletics, generally prefer to utilize in preparation for field and track athletic events.

Shower baths and a plunge are almost requisites in a mounted command. A small library should keep on file American military periodicals.

The quarters of both officers and enlisted men should be well equipped, but appropriately furnished. This means *simply* furnished. There has existed for many years in the militia an earnest rivalry among companies in the matter of sumptuous furnishings in company rooms. Some of these rooms in consequence more resemble a reception room of some pretentious mansion than they do the quarters and locker rooms of a military command. The non-commissioned officers of the battery should have quarters separate and apart from the quarters of the drivers and cannoneers. Distinctions of this character serve as an ever-existing reminder of the distinction between non-commissioned officers and privates, and make for better discipline. Bowling alleys, pool or billiard tables and other similar forms of amusement, while proper in the army, for obvious reasons, are decidedly out of place in a militia armory and should not be permitted. Their sponsors are usually those who are in the service for other reasons than the promotion of military efficiency. An armory is not a clubhouse.

The most marked innovation in the matter of armory quarters to be suggested in this paper, and one which it is submitted will do more to improve military efficiency than any other, is the following: First, it might be well to point out that what the militia soldier lacks at the present time is what in art is termed "atmosphere." He is a soldier for so small a part of the seven days of the week that unless he is a born soldier his civilian characteristics predominate and are detectable when he is on duty, and these characteristics are often times incompatible with military requirements. To keep him in the military atmosphere of the armory and under the restraint of military discipline for a greater portion of the week than at present obtains is admittedly desirable, but is not practicable under existing conditions. This, however, can readily be accomplished. The quarters of the enlisted men should include a dormitory, and it should not only be permissible for the unmarried men to live in the armory, but they should be encouraged to do so upon condition that they fulfil prescribed

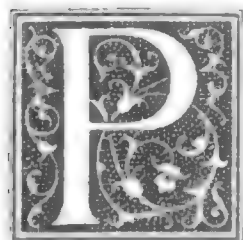
military duties. The State would offer to such men, without money charge to them, what they would have to pay highly for at a hotel or club; that is, a good dormitory, cot, bedding, soap, towels, light, heat, library, shower and plunge baths—in fact, a handsome home. Such men could run a mess and give one of the battery cooks permanent employment, and thus obtain their meals at cost. That such an opportunity would be immediately taken advantage of by a great number of enlisted men will hardly admit of dispute. The cost of the above plan to the State could therefore be limited practically to the cost of laundry work and toilet supplies, an insignificant sum in view of the gain in military efficiency. For these privileges the men would be required to answer reveille each morning, followed by fifteen minutes of setting-up exercises, and a bi-weekly fire call, call to arms, or other drill, which would be in addition to regular drills of the battery. The conditions mentioned are matters of detail, and could be added to or modified in any way that experience and particular requirements might show to be more desirable. Under this system, these men would in a short time become what might be termed half regular soldiers. They would daily be under military restraint and discipline and daily under the influence of old soldiers who would hold all the positions of permanent employment in the armory, as shall be observed under the head of "Personnel." If thus one-fourth or one-fifth of the men of the battery had their permanent quarters in the armory, and daily performed some slight military duty for that privilege, it must be evident that these men would furnish a very superior homogeneous and disciplined nucleus for the battery command.

The matter of quarters for the commanding officer and the lieutenants and rooms for administration purposes, and for the first sergeant, quartermaster, commissary and veterinarian, presents nothing unusual.

[TO BE CONTINUED.]

PROMOTION BY SELECTION.

BY CAPTAIN EVAN M. JOHNSON, JR., EIGHTH INFANTRY.



PROMOTION by selection represents an ideal system under which the ablest and most deserving are advanced rapidly to the front, the inefficient are dropped out, and the army placed on a higher plane.

Is this method practicable, that is, will it secure the desired result?

It is the object of this paper to prove that not only it will not, but that it will work positive injury.

If doubt should arise as to fairness of the method of selection the entire army would be pervaded with discontent, the cry of favoritism be raised, and the mass of officers feel that they had no chance. They would perform their duties and studies perfunctorily, just well enough to keep in service, for take out of the heart of man the idea of reward and position, and there remains no incentive for individual effort. The tone and efficiency would not only be lowered, but low.

It is admitted that the idea of selection by promotion is good, that every effort will be made to have such selection honestly and fairly made, that officers constituting boards will be fair and honorable. And yet, in spite of all this, the assertion is made that any system of selection introduced in our army will be absolutely unfair, and seriously impair its efficiency.

There are two phases to consider—peace and war. Taking first, "peace," what are the bases on which the selection of an officer for promotion can be made? They are, his routine post or office duties, and his record at the various military colleges. Considering the first, "routine post or office duties": officers are scattered all over the territory of the United States; some in the Philippines, some in the West, some, perhaps, in Washington. Three officers of equal abilities are in the three different places. The one in the Philippines does a brilliant bit of field work, showing bravery and skill in handling troops; the second, in Washington, great executive ability as the head of some important office; he in the West does his work con-

scientifically and faithfully, but not having the opportunity, does only what the mass of officers do daily, his routine duty. Suppose that in other respects their records are equal, which of these officers is to be selected for promotion if they happen to come to the top of the list at the same time? Certainly not he who is doing his "duty" in the West, although in reality he may be the best of the three, and have simply lacked the final opportunity given the others. And of the other two, which one goes up, the clever office man or the clever soldier? Another case; one lieutenant commands a company for several years because his company commander is on detached service. He does it well and is reported upon for his efficiency in the routine reports of his post commander. A second in the same post is unfortunate enough to have his captain present and has no opportunity to show his ability except as a subaltern. Is the second to be overslaughed because he has had no chance? How is it to be decided in these cases which officer is the best?

There are, of course, flagrant cases in which men are notoriously unfit for promotions, but take the average officer, by what means shall it be determined whether he is to be selected? By the efficiency reports of his commanding officer?

In a post one commanding officer may grade all his officers as "Very Good." Another may grade this same set of officers as "Excellent." Men vary in their ideas of excellence, and in the above instance it is seen that two sets of officers, possessing equal merits, may be differently graded in two posts by their respective commanding officers.

Again, consciously or unconsciously, some commanding officers allow their personal feeling to influence their official reports, for they are only human.

An efficiency report does not afford a fair base for selection. Shall it be then by the amount of staff, detached service, etc?

Some colonels select their staff-officers because they are good fellows, others for their social qualifications, others for their abilities. How shall a board determine for which of the above reasons the position of staff-officer was given, and thus select the proper candidate for promotion?

As to detached service; it is so well known that influence is constantly used to secure detail that it is not worth while discussing the *merit* (?) which, as a rule, obtained the detail.

In short, it may be without question affirmed that there is no possible way in which an officer's record in time of peace

can be used as a fair guide for selection for promotion, for all officers have not equal opportunities, and to select from the few whom chance and influence have favored would be rank injustice.

As for the fairness of boards; it is not believed possible that one can be constituted whose selections will be fair. By this it is not meant that its intentions will not be fair, but its action. It is hardly likely that any board will contain members who do not know, personally, some of the officers who are to be passed upon. Take an instance in which, of the names submitted, one is personally known to the members as a most excellent officer, the records in all cases being good. Members would not be human were they not biased toward the man they know.

Again, supposing they know none of the officers whose names are submitted, but the President or Secretary of War should say, "Gentlemen, I do not wish to influence your action, but everything else being equal, it would please me to see so and so, whom I know to be a most excellent officer, promoted." Boards are composed of men, and "everything else being equal," why should they not carry out the desires of him to whom they look for honors. That these boards will be subjected to social and political pressure there is no doubt.

It is an unfortunate fact that politics and influence have been a considerable factor in securing advancement in the past, and it is doubted whether these elements will ever be eliminated.

A prominent senator whose son is an army officer is naturally going to do everything possible to secure the advance of that son, and that advancement, no matter how worthy, will be viewed as another example of the results of influence. The army will become a political camp, every one pulling for influence, no matter what orders are issued. There was a system of promotion by selection prior to the creation of the detailed staff, and all know that when an officer desired an appointment in one of the permanent corps he pulled every string he could, social, official, political, and that nine times out of ten it was the man with "the longest pull that got the persimmon." This condition would recur in an aggravated form were selection in the army, instead of a few staff-corps, made the rule.

As to the second method of selection, from college standing,

this is obviously so unfair that it is doubtful whether discussion is necessary, and yet the author has recently seen this advocated. To begin with, many officers never get the opportunity to go to the service schools. Commanding officers recommend officers for detail thereto for various reasons, some because they have stood well in the post schools, others because they need instruction or discipline, others as a matter of favor. It is not always that the best man in the regiment gets the opportunity to go, and if selection by this system is to be made, how about the unfortunate who has not had the chance?

Further, it is a well-known fact that it is not always the high-grade student that makes the best officer in command of troops. For this are required many other qualities than ability to grasp technicalities and recite. Study is needed, hard and constant study to keep an officer up in his profession, but because an officer graduated number six instead of number one in his class it will not be evident to the majority that number one must of necessity be the better all-around officer. The injustice to the many by creating a "Brahmin Class" of this kind, and the effect upon the others, and *morale*, can be easily understood.

And so, finally, it may be said that there appears no way by which promotion by selection may fairly be made, and even if there were, it is questionable as to whether the evils resulting would not be greater than the good. You *might* have a few pre-eminently brilliant men at the top, you *would* have a mass of sullen, discontented men at the bottom, a bad feeling to engender in an army now satisfied and willing.

The idea of putting younger men over older, and this would be the tendency of the system, is bad. Older men resent dictation from younger, feeling that knowledge and experience come with years and training. There are, of course, young men who are military prodigies, like Napoleon, but promotion by selection in time of peace does not make them; it takes war to discover their abilities.

All said and done no better system than the present, with perhaps one modification, can be devised for time of peace. There are no jealousies, no fears of injustice. Officers study, try to improve themselves and maintain a high professional standard. The post and service schools all tend toward this.

■It has been claimed that we need some spur to incite officers to greater individual effort, that they are too sure of

their positions and promotions. This is not so. A good officer will do his work to the best of his ability at any time, and the "spur" of promotion by selection would not better his efforts; and there is to-day in the army an incentive in the shape of the general and detailed staff. Every officer with ambition looks forward to one of these details, and to this end uses every opportunity to bring himself professionally to the front. Details of this kind broaden an officer, make him fitter for higher command. They make him more prominent, better known and more liable to selection for promotion in case of war. Officers know this, and what greater incentive does the ambitious officer require?

All realize, also, that before promotion is obtained an examination must be passed, and no man likes to go before an examining board unprepared, the results of failure are too serious.

It has been claimed that for sentimental reasons boards sometimes pass officers not entitled to promotion, and this is perhaps true, although it is believed that the very great majority of officers are capable men, who, in the future, as in the past, will prove themselves competent to fill any position to which they may be called.

A change for the better might be made by amending the present law to the effect that after a second failure in mental examination an officer of over fifteen years' commissioned service, instead of being wholly retired as at present, be retired on half-pay with the grade held at the time. This would do away with the "sentiment" which occasions the passing of an incompetent officer on account of his length of service, and the hardship of returning him to civil life entirely unfitted therefor at an advanced age, and perhaps with a family to support.

In addition to this, commanding officers and inspectors should recommend for examination officers mentally or physically unfit for the duties of their grades. There is too much consideration shown in this matter. All officers should be examined physically before being promoted. If the standard for examination is not considered high enough it should be raised, either by increasing the requirements or the percentage.

By this means elimination would take place, which would increase promotion, put younger men forward in the field

grades, and weed out the incapables, all without injustice or hard feeling.

All said and done, there does exist in our service promotion by selection to be used at the only time when needed, *i. e.* during war. If the President deems an officer worthy of high command at such time, all that it is necessary for him to do is to give him a volunteer commission and let him prove himself. If it be shown that he has pre-eminent abilities he can, at the close of the war, be commissioned in the army with higher rank, for Congress has always shown itself willing to regard the wishes of the President in filling offices existing with those whom he nominates, and more, it has created offices for those specially deserving.

Other than this, selection should be limited to the colonels of the army, from whom generals should be selected. There is no one who was in service prior to the late war that cannot recall the bitter comment and discouragement of many an able officer who, on account of the inequalities of regimental promotion and methods of selecting the General Staff, was passed over by his juniors. This feeling would recur in an intensified and extended form should any such system as that proposed be put in force.

It is a strange thing that promotion by selection has been considered necessary for the army and not the navy. Both are military bodies and the arguments which apply to one apply with equal force to the other. It is admitted that a more capable body of officers than those of the United States Navy cannot be found in the world, and yet they have *promotion by seniority* to the highest grades. Why should this system produce different results in the army? As a matter of fact, it does not and will not. The agitation for the change comes from a few; the mass of officers are overwhelmingly against promotion by selection, and they know what is best for them and what they want.

"Let us have peace."

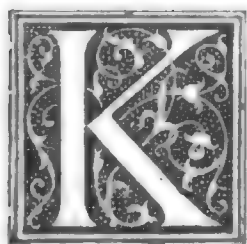
FIELD AND SIEGE OPERATIONS IN THE FAR EAST*

BY COLONEL WILLIAM R. LIVERMORE, U. S. A.
CORPS OF ENGINEERS.

III

BATTLE OF THE SHAHO.

[Russians 270,000. Japanese 270,000.]



KUROPATKIN having successfully withdrawn his troops after the battle of Liao-Yang and having been materially reinforced soon after, published on the 2nd of October his famous proclamation announcing that the time had come to take the offensive. He has been severely criticised for this proclamation and for his rashness in throwing his troops against the enemy's intrenchments when at Liao-Yang, he had been unable to defend his own. It must be considered, however, that at Liao-Yang the Japanese carried the Russian intrenchments by turning their flanks, and the results of this battle might easily inspire him with confidence in the ability of good troops by their skillful disposition and numerical superiority on the decisive point to counteract the advantages which intrenchments afford to the passive resistance of troops armed with modern weapons. Kuropatkin's plan was to concentrate a large army under Stackelberg against the right flank and rear of the Japanese position, while making a simultaneous attack along the whole line to divert the attention of the Japanese and to prevent them from leaving their trenches to reinforce the threatened flank. If this plan succeeded he could roll up the entire line and then march on to the relief of Port Arthur. Whereas if he waited he would have to meet the combined forces of Oku, Nogi and Kuroki now in his front, and of the Army of Port Arthur and of the new levies from Japan, all of which finally met him at the battle of Mukden.

*Continued from July Number of the JOURNAL.

Owing to the small scale of the maps it is generally impossible to show anything but the front lines of the opposing armies.

The Russian forces were organized as follows:*

The Army of the East under Stackelberg, included the First and Second Siberian Corps and the Third Corps formed in Manchuria. The Army of the Center comprised the Fourth Siberian Corps (Soroubaieff) and the First Russian Corps (Meyendorff). The Army of the Right was composed from left to right of the Tenth Corps (Sloutchevesky) the Seventeenth Corps (Binderlink) the Sixth Corps (incomplete) and the Fifth Corps. In advancing to the attack large gaps were left between the armies and the co-operation was not complete.

On the 4th of October an advance was made all along the line and the Japanese outpost at Bentsiapudza (Ping-tai-tzu) was driven in. On the same day the Russians reoccupied the railroad station at the Sha-ho. On the 6th the Cossacks advanced almost to the Yentai mines. On the 8th the Russian cavalry crossed the Tai-tzu-ho above Pen-shi-hu.

The Russian accounts of this battle now at hand are very meagre, and it will be best to follow the course of events from day to day from published reports of the Japanese.

On the 9th of October the Russian position, as reported by the Japanese, was as follows:—

In front of the Japanese Right Army (Kuroki) a brigade of infantry, 2,000 cavalry and two guns south of the Tai-tzu-ho, which turned the right flank of the Japanese position and cut the communications between Hsi-ho-yen and Pen-shi-hu. Another brigade of infantry with 1500 cavalry and eight guns immediately north of the Tai-tzu-ho, another mixed brigade near Ta-ling, a regiment at Mien-hua-pu and one at Pa-chia-tzu. These forces were all advancing south, followed by others. Two regiments of infantry at Shang-liu-ho-tzu and a regiment of cavalry at Hsia-tu-ho-tzu. A division at Shao-to-kou.

In front of the Japanese "Central Army" (Nodzu). About a division on the line connecting Chien-huang-hua-tien, Pan-chi-ao-pu and Lin-tang-kou on the morning of the 9th moving south.

In front of the Japanese "Left Army" (Oku), the Russian forces were not active and their main strength appeared to be in the neighborhood of Lin-tang-kou and Sun-chi-tun.

On the Japanese side, Kuroki sent a column of troops to reinforce the garrison of Hsi-ho-yen. The Russians were at-

*Vida Battle of Shakhe River, Geo. de Salle, Journal of M. S. I. 136, p. 32.

tacking Hsiang-shan and Pen-shi-hu. The Pen-shi-hu detachment was reinforced. Nodzu and Oku were fighting with Russians in front of them.

In the night of October 9-10, a large force of Russians arrived at Ta-ling and about a brigade at Tu-men-tzu-ling, and attacked the Japanese positions. Several hand to hand fights are reported. Pen-shi-hu and Tu-men-tzu-ling were reinforced. The Russians camped at close quarters along this line, and in the night they carried the heights east of Pen-shi-hu and those east of the road leading north from Pen-shi-hu.

On the 10th of October the Japanese retook these positions in a dense fog. The Russians were reinforced and the fighting was heavy along this line. At 11 A. M. the Russians charged the heights east of Hua-tien-kou and after a severe bayonet fight were repulsed. The right column of Nodzu's army occupied the heights east of Yu-men-tzu on the morning of the 10th. On reaching the heights east of Huangti, the left column attacked the Russians at Wu-li-tai-tzu without success.

The right column of Oku's army having occupied the neighborhood of Ku-chia-tzu, made an attack in conjunction with the left column of Nodzu's army on the heights of Wu-li-tai-tzu and on Ehr-tai-tzu, thereby occupying a line extending from Shang-tai-tzu to Ehr-tai-tzu. Oku's central column carried Ta-tang-shan-pu. This left column attacked the Russians at Hsi-lao-shan-tun and advanced as far as Ho-chia-tun.

October 11 at 3 A. M. The Japanese garrison left at Hsien-chang made a night attack on the enemy in its front and drove him back to the north-east. The fighting was very heavy all day along the Japanese left from Ta-yu-pu on the Tai-tzu-hu to Pen-shi-hu, Ta-ling and Ta-men-tzu-ling. The Russians also occupied in force the line from Pa-chia-tzu to San-chia-tzu. Kuroki tried in vain to dislodge them.

Nodzu's right column cooperated with Kuroki in the attempt to carry San-chia-tzu and advanced in the direction of Ku-chia-tzu and of the district east of San-kuai-shih-shan. Nodzu's left column made an unsuccessful attack on the Russians at Shih-li-ho.

Oku's right column, continuing the attack, advanced to the neighborhood of Lin-san-chia-tzu and his left column to Li-ta-jen-tun, threatening the Russian right flank and rear.

The Japanese report of the fighting on the 12th says that

"while Nodzu was completely successful in breaking the Russian center and thereby relieving the pressure on Kuroki, Oku's part in the day's fighting was brilliant. He advanced his Left Army with great rapidity and attacked the Russian right with such energy that Kuropatkin was compelled to weaken his center at a critical time in Nodzu's attack in order to go to the relief of his Right Army, then severely pressed by Oku's troops." The turning movement of Oku was half successful, and so weakened the Russian center, that as Nodzu advanced, Kuropatkin was compelled to order a retreat of the entire army to the next line of hills. This practically broke the line between his left and centre, thus putting the left of his army in the position in which it was on the morning of the 13th, when Kuroki was attempting to surround several of its divisions north of Pen-shi-hu.

So far as the grand tactical situation is concerned it would appear that it would have been better for the Russians to have made the Army of the East strong enough, and to have pushed it on vigorously enough to accomplish its purpose of turning the Japanese flank. The Russian center need not have been as strong as it was at first to resist the advance of the Japanese center. If the Russian right fell back to a position prepared for defense it could keep open the road to Mukden and the Russians could afford to lose a piece of the railway if they could in this way rout one-half of the Japanese Army.

In several of the battles of this war the army on the offensive has tried to support its main attack by attacks all along the line, to prevent the defense from reinforcing the point of attack. This reduces the oblique to the parallel order and loses the advantage of presenting the forte and withdrawing the foible. In all parts of the field, excepting that where the main attack is to be made, it would appear to be desirable for the army on the offensive to enjoy the advantages of a passive defense in a fortified position, unless vastly superior in strength, in which case it might be desirable to overwhelm the enemy at all points. The chief difficulty with the Russians, however, appears to be that while they were trying to turn the Japanese right and the Japanese were trying to turn the Russian right the superiority of the Japanese in maneuvering enabled them to make good use of all their troops while those of the Russians were either in each other's way or out of the way altogether, so that the advantage of the initiative

was in a measure lost. It is said, however, that if Stackelberg had pushed on instead of withdrawing he would have found little to oppose him.

October 12th, the Russians who had cut the communications between Pen-shi-hu and Hsi-ho-yen fell back. Their attack in the direction of Pen-shi-hu was repulsed and the Japanese sent a detachment to Shih-chiao-tzu to cut off their retreat. The central column of Kuroki's army occupied the heights north of Pa-chia-tzu and then of Ma-ehr-shan and the heights toward Mang-chia-pen. The left column occupied the heights north of Shao-ta-kou.

The right column of Nodzu's army, which had been co-operating with Kuroki at San-chia-tzu, went to the heights northwest of San-kuai-shih-shan and then pursued the Russians in the direction of Ku-chia-tzu.

The Russians intrenched at Chien-huang-hua-tien.

The central column of Oku's army after a fight at Lang-tzu-kai advanced to Hsiao-tung-tai and Lin-san-chia-tzu. The right column to Wu-li-kai (northwest of Shih-li-ho) and Lung-wang-miao (west of Liu-tang-kou). The left column bombarded Pei-yen-tai.

October 13th, early in the morning, a large body of cavalry under Prince Kotohito Kanin outflanked the Russian left and drove back the reserves.

Kuroki's right column attacked Chao-tsin-ling. His central column also occupied the heights at Lien-hua-shan and Ma-ehr-shan and the left column pursued the Russians from the heights north of Shao-ta-kou.

The nature of the ground retarded the progress of Kuroki's army.

Nodzu's army, turning to the northeast, carried the heights north of Ku-chia-tzu and occupied Hu-chia and Mang-chia-fen.

The right column of Oku's army occupied Pan-chia-pu and, reinforced by the reserves, attacked the Russians near Huang-hua-tien. The Russian batteries at Chien-huang-hua-tien offered a stubborn resistance. The central column occupied Liu-san-chia-tzu and then attacked Sha-ho-pu. The left column attacked Lin-shan-pu and carried Man-chia-yuen-tzu.

October 14. On the extreme right of the Japanese position Prince Kanin continued the fight on the left bank of the Ta-tzu-ho near Wo-ling-tun. Japanese reinforcements arrived at Hsi-ho-yen.

The Russians opposed to Kuroki at Pen-shi-hu began to retreat at 11 A. M. The Pen-shi-hu detachment pursued. In the afternoon the Russians also retreated from Ta-ling and Tu-men-tzu-ling.

The Pen-shi-hu detachment advanced as far as Ping-tai-tzu and the neighborhood of Pien-niu-chia-pu which the Russians fortified.

Kuroki's right column advanced in the direction of Tai-chia-tao, his central column occupied the heights northeast of Chin-chuang-shan and his left column the heights north of Lien-hua-shan, and then all pursued the Russians to the Sha-ho at Ta-shan and Feng-shi-pu. A detachment of the reserves occupied Wai-tou-shan.

Nodzu's army attacked the Russians at Pu-tsao-wo and reached the line of the Sha-ho, driving the Russians to the north of the river.

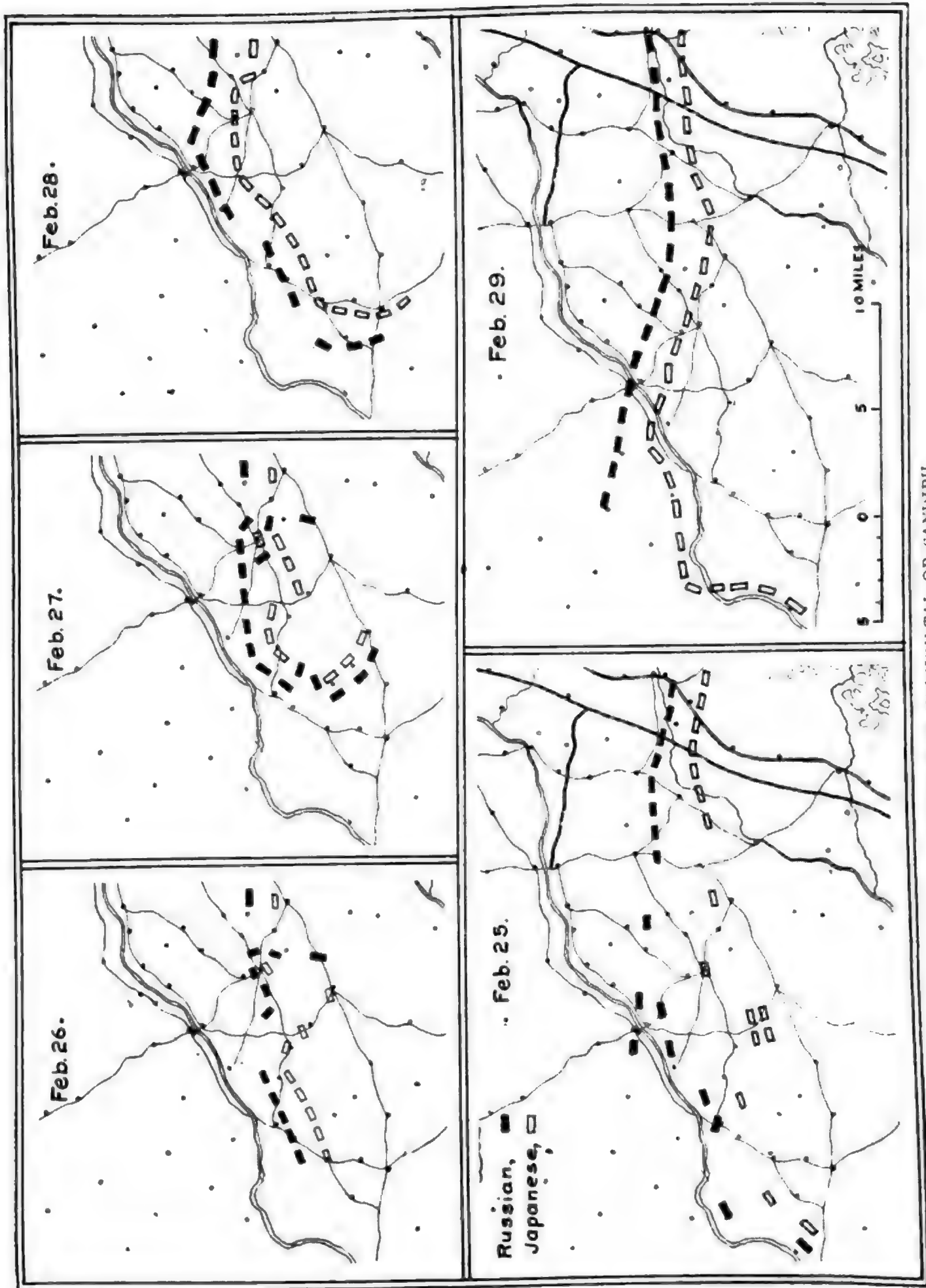
Oku's right column carried the heights northeast of Huang-hua-tin, his central column took possession of the heights south of Sha-ho-pu and captured Kan-chia-wo-tzu. His left column attacked the Russians at Lien-shan-pu and carried it. The Russians retreated to Ssu-fang-tai. The Russians attacked at Wau-chia-yuen-tzu but were driven back.

October 15. Oku's army occupied Sha-ho-pu and captured La-mu-tun. The Russians retired toward Ssu-fang-tai.

The Russians still held the heights of Wai-tou-shan south of the Sha-ho, from which they were driven on the 27th, and the little Lone Tree Hill on the banks of the Sha-ho three miles east of Sha-ho-pu was the scene of repeated assaults and noted for the display of heroism on both sides, but especially of the Russian Putiloff.

After the Russians had begun to fall back, great alarm was spread abroad over the fate of Stackelberg's army. It was said to have been cut off by Kuroki while the right wing of the Russian Army was turned by Oku. There appears to have been comparatively little ground for such fears. Its retreat was protected by a strong position on the hill at Wai-tou-shan, and the Russians held the line of the Sha-ho and much of the ground that they had regained during the winter season.

This battle is full of useful military lessons, which will be discussed hereafter.



BATTLE OF HEI-KOU-TAI, OR SANDIPU.
(Feb. 25-29, 1905)

BATTLE OF HEI-KOU-TAI, OR SANDIPU.

[Russians, 80,000. Japanese, doubtful.]

After Port Arthur had fallen on the 1st of January, the Russians realized that they would soon have another army to encounter in addition to those of Oku, Nodzu and Kuroki, which they had fought at Liao-Yang and Sha-ho. It was important to know where Nogi was going, and on the 11th, Mistchenko, with the Russian cavalry, was sent on a raid to find him and to cut the railroad from Port Arthur. From the right flank of the Russian army he advanced as far as Niu-Chuang and found no evidence of a large Japanese army west of the railroad.

The only hope for a brilliant success for the Russians depended upon turning one wing of the Japanese army which still occupied a strong position along the Sha-ho extending west of the railroad beyond Hei-kou-tai.

The plains on the west offered a better prospect of success than the mountains on the east, and as Nogi was not to be feared in that direction Grippenbergh, with an army of about 80,000 men and 350 guns, was ordered to turn the Japanese left flank.

The ground was frozen hard and covered with snow and ice, which made intrenching impracticable and gave additional strength to earthworks already constructed, so that they deflected projectiles much better than soft earth or sand. The correspondent of the Associated Press wrote:

"Although cold, the weather is ideal for winter campaigning. The ground is hard and the rivers are frozen solid, which makes easy the handling of artillery."

The advanced posts on the Japanese left were located at Hei-kou-tai and Chen-tan-pu (Sandipu), with strong reserves at Ta-tai and Lang-tung-kou. Chen-tan-pu was strongly fortified. The report says: "The Japanese had erected there a fort of a permanent type with triple earthworks and trenches extending in a southwesterly direction. Several villages to the northeast were also fortified strongly." The flat country in front formed a natural glacis and was completely swept by the fire from the forts.

On the 25th of January the Russians crossed the Hun-ho from Chang-tan to Chi-tai-tzu, surrounded and captured Hei-kou-tai and advanced toward Chen-tan-pu (Sanipu).

On the 26th the Russian force at Hei-kou-tai was strongly reinforced and Tou-pao was taken. The Japanese sent up their reserves from Ta-tai, which deployed on a line from Wu-chia-zu to Su-ma-pao and Lao-chiao. At the same time another Russian force, about a division strong, advancing from Chang-yan, invested Chen-tan-pu and sent a battalion or two against Lao-chiao. Japanese reinforcements came up to meet them. In the evening the Russians occupied a part of Chen-tan-pu, but coming upon a strong redoubt with a triple row of artificial obstructions which had been scarcely damaged by their fire, were forced to retreat. The Russian cavalry penetrated six miles south of Chen-tan-pu.

On the 27th the Russians near Lao-chiao fell back and the Japanese concentrated on Hei-kou-tai and Tau-pao, which were said to present the aspect of a fortress, being very strongly defended with field-pieces and machine guns.

Japanese reserves advanced from Lang-tung-kou to the center and to the left of the Japanese position, which was driven back to the line San-chien-pao, Hsu-chia-wo-pen, and Chen-shao. Su-ma-pu was surrounded and captured by the Russians in a midnight attack.

On the 28th the Japanese were reinforced and drove back the Russians in the center and on the left. The Russians fell back from Chen-tan-pu, but held Hei-kou-tai. After repeated attacks lasting three days and nights, the Japanese had been unable to drive the Russians from the left bank of the Hun-ho.

On the night of the 28th-29th they made several attempts to carry Hei-kou-tai and sustained severe losses due to the Russian artillery, and especially the machine guns. At 9.30 A.M., however, the place was taken, and on the arrival of more troops from the Japanese reserves the Russians withdrew from all the ground on the left bank of the Hun-ho south and southwest of Chang-tan.

During this battle the temperature fell to 20 degrees below zero, with a high wind which drifted the snow and rendered it hazardous to expose the troops to camping in the open plain, and also impeded the transportation of the guns and supplies and of the wounded. The report says that the soldiers' fingers, hands and feet, were benumbed, while stinging snow blinded them. The slightest wound caused excruciating pain. The wounded could not be left exposed, and if they did not receive attention within an hour they died.

After the battle it is reported that Gripenberg complained that he had not been supported by Kuropatkin, and another report says that he would have succeeded if he had not been ordered to retreat. If the weather had not changed this does not seem altogether improbable. The turning movement depended for its success on the concentration of superior force upon the Japanese left and rear, beyond the line of intrenchments where the attack and defense would meet on comparatively equal ground. A similar plan was carried out with better success by the Japanese at the battle of Mukden.

The long line of trenches from Chang-tan to the upper Sha-ho could have been held by a much thinner line of troops than that with which the Russians occupied it at the time, and a large fraction of this force could have been spared for the turning movement. It is not probable that Gripenberg thought that the left of the Japanese position extended as far to the west as it did. If more troops had been available it would have been better after reinforcing a few weak points in his line to extend it still farther to the west, in order to envelope the Japanese left rather than to attempt to carry such strong positions as that at Sandipu. Such maneuvers of course, depend also for their success upon the agility of the troops to enable them to avail themselves of the advantage of position which they gain by the initiative.

BATTLE OF MUKDEN.

[Japanese 430,000. Russians 360,000]

Ever since the battle of the Shaho the hostile armies confronted each other over lines which gradually increased in length to about sixty miles with their centers along the Shaho about twenty miles south of Mukden. In places the two lines were not twenty yards apart.

Neither side carried its line of intrenchments more than about twenty miles west of the railway.

Liao-Yang and the Tai-tzu-ho formed the second line of the Japanese, and the Hun-ho from Mukden to Fu-shun, the second line of the Russians.

Fushun lies twenty-six miles east of Mukden. It was particularly valuable to the Russians on account of its coal mines, and for this reason and for strategic and tactical purposes Kuropatkin had connected it with Mukden by a railway.

The Russians divided their forces into three armies in this battle, the first under Linevitch, the second under Kaulbars and the third under Bilderling. Linevitch had three army corps, the Second, Third and Fourth with Rennenkampf's independent corps of Cossacks. Kaulbars had four army corps—the First (Siberian), Fifth, Eighth, and Tenth, with a division of Rifles. Bilderling had the First, Sixth and Seventeenth Corps. The Sixteenth Army Corps formed the general reserve. Mistchenko had an independent cavalry division.

There were in all 376 battalions of infantry, 171 batteries of artillery, and 178 sotnias of cavalry—making numerically about 300,000 rifles, 34,000 gunners with 1,368 pieces and 26,700 sabres or a grand aggregate of 361,500 of all arms.

The Japanese had three armies opposed to the Russians.

Kuroki had three divisions, Nodzu two and Oku four. During the battle Kawamura came up on the right with three divisions and Nogi on the left with four. The full strength of a division would be about 30,000, making a total of 480,000, but it is safe to deduct at least ten per cent. and take 432,000 as the maximum estimate for the Japanese Army. The Japanese artillery may be estimated at 1600 pieces. The Japanese journals place the numbers on both sides at Liao-Yang at 460,000, at the Sha-ho at 580,000 and at Mukden at 850,000, but these numbers are probably too small.

Oyama's or, perhaps, Kodama's plan was to bring up the army of the Yalu under Kawamura to the mountainous region, on the right of the Japanese line, and by a vigorous attack draw the Russian reserves in this direction, and to bring up Nogi with the army of Port Arthur on the left of the line, under cover of a vigorous attack by Oku, so as to turn the Russian right.

It appears to have been well known that Kuropatkin would expect an attack in the mountain region on his left, because the Japanese had been accustomed to this kind of warfare and were not considered a match for the Russians in level ground like that on the Russian right. This opinion was confirmed by the fact that after the battle of Hei-kou-tai the Japanese did not follow up their victory.

Many considerations led the Japanese to fix upon the end of winter as the time for the great battle. Up to the first of January all the supplies and reserves were required for the army of Port Arthur. It was desirable to cross the Hun while it was still frozen, and the difficulty of digging trenches in

frozen ground put the attack on a level with the defense as soon as the field of battle extended beyond the original entrenchments. On the other hand it was not desirable to bring the army of the Yalu into the field in the early winter, for it could be better organized, subsisted and drilled nearer home. The army of Port Arthur made good use of the months of January and February to prepare for its new rôle and to come up into the line.

Kawamura's army disappeared from Japan at some time near the close of January, and up to the time of the battle of Mukden the Japanese public did not know where it landed, what route it took, or the force it mustered.

Kuropatkin knew that it was somewhere east of Mukden, and this helped to confirm his forecast that the Japanese flanking movement would be made through the mountains. Therefore he massed a force of 60,000 men in strongly intrenched positions on the south and southeast of Fushan.

Nogi's army also passed out of sight immediately after the fall of Port Arthur. Kuropatkin probably hoped to get into touch with it when he sent Mistchenko's cavalry raid against Niu-chwang and Hai-cheng in the early part of January, as well as from the results of the turning movement at Heikou-tai later in the month.

From the failure to find any trace of this army in the west, Kuropatkin appears to have inferred that it was also to take part in the flanking movement in the east.

Thus everything turned out as the Japanese had wished, to enable them to turn the right of the Russian army in the open plain west of the railroad by bringing up Nogi's army from Port Arthur on the left of the position where the hostile armies had confronted each other since the Battle of the Sha-ho.

It cannot be regarded as a serious mistake for Kuropatkin to think that his enemy would come up on one side or on the other.

The dispositions that he made to meet the attack are what interest the military student.

The best proof that the main attack was not coming from the west would have been the possession of the dangerous ground by his own advanced parties, and for the failure to secure it and communicate to him what was actually going on in

different parts of the field either he or some of his subordinates are responsible.

Before the battle the Russian line of defense had been extended to the east in the direction of Ma-chun-tun and Ti-ta, although the advanced posts held the line of the Tai-tzu-ho, twenty miles to the south. On the west the hostile forces were in contact for some distance beyond the railroads, and the extreme Russian left occupied the line from Chang-tan to Ssu-fang-tai. Rennenkampf's detachment was on the left. Linevitch held the line of Ti-ta and Ma-chun-tun. Bilderling the center as far as the main road, and Kaulbars the left. The Sixteenth Corps was in reserve at Hun-ho-pu.

The Japanese armies of Oku, Nodzu and Kuroki confronted the Russian right and center on the same ground that they occupied after the battle of the Sha-ho, excepting that Kuroki had slightly extended his right flank. The Japanese left was purposely not extended, but Nogi's army was assembled in Oku's rear, directly west of Liao-Yang, screened by all the cavalry of the Japanese army.

On the 19th of February the army of the Yalu, under Kawamura, began to appear and drove in the Russian outposts at Chien-ho-ling on the 20th, near Wan-liu-ho on the 21st, and at Nan-tai-tzu on the 22nd. Between the 19th and 22nd the Japanese had occupied Wei-tzu-ku, Chin-tu-ku and the left bank of the upper Tai-tzu-ho. On the 23rd they attacked Ching-ho-cheng in a heavy snow storm. The ice in the Tai-tzu-ho was breaking up.

On the 24th Ching-ho-cheng was taken. Meanwhile the Russian artillery was firing on the advanced positions of the Japanese all along the line. The Japanese left wing held its position, but on the right wing Kawamura advanced in two columns, one directed on Ti-ta and one on Ma-chun-tun.

On the 26th the first had reached Wu-lung-kou and the second San-lung-ku. In the center the Russians abandoned a few outlying posts.

To protect his left flank Kuropatkin sent a large force from his reserves, probably the Sixteenth Corps, by rail to Fu-shun and thence by road to Ma-chun-tun and Ti-ta.

From the 26th of February to the 7th of March the right wing of the Japanese Army made but little progress. The right column under Kawamura reached the immediate neighborhood of Ti-ta on the 27th of February and Ma-chun-tun

on the 1st of March, but the Russian positions there were impregnable.

The Right Central Army, under Kuroki, was also divided into two columns. The right column co-operated with Kawamura in the attack of Ma-chun-tun and the left tried to carry the Russian position on the Pen-shi-ho road.

On the 6th Kawamura's left column occupied the heights north of Hwang-ti and Kuroki's right column those south of Pai-tzu-kou.

The Russians made frequent counter attacks.

By the 3rd Kuroki had carried the advance positions of the Russians on the Sha-ho, and on the 4th the Russians made a counter attack on Pien-niu-lu, but without success. On the 5th Kuroki carried a position on the heights of Tung-kou, east of the Sha-ho.

Between the 2nd and 6th, the Central Army, under Nodzu, with two of Oku's divisions gradually forced the Russians back from Yao-chien-hou-tun, Tang-chia-tun and positions south of the Sha-ho. Liu-chuang-tun and Wanpao-shan were carried on the 5th.

These were advanced posts, and on the 7th of March the Russian left and center still held its fortified position, extending from Ti-ta on the east through Ma-chun-tun to the range of hills on the right bank of the Sha-ho from its sources to the main road from Liao-Yang to Mukden, and there is no reason to suppose that they could ever have been driven from this position by a frontal attack even if it had been defended by a much weaker force than that which had held it through the Winter.

In the meantime, in the district west of the railroad, up to the 27th of February, the Russians kept up a heavy artillery fire where the battle of Hei-kou-tai had been fought a month before, but Oku with the Left Central Army crossing on the ice advanced on both banks of the Hun-ho against the fierce opposition of the Russians.

On the 1st of March he turned their strong position on the right bank of the Hun-ho, extending from Ssu-fang-tai to Chang-tan. On the 2nd he reached Wu-kia-tai and Chang-tan, and on the 3rd Wo-kia-pu and Meng-ta-pu, On the 4th Su-hu-pu, Lai-shen-pu and Su-chia-pu, and on the 5th Hsio-su-chia-pu and Han-sheng-pao. These positions were strongly contested and counter attacks in the night were frequent. Ehr-

tui-tzu was carried on the 6th. In this way Oku had turned the Russian right and on the 7th had arrived within twelve miles of Mukden.

The ground was frozen hard and trenches could not be improvised, the fight was kept up in all the villages with which the plain was covered. The houses were set in stone, or mud-walled compounds which were excellent protection from rifle fire. The Russians sometimes entered at one end of a village and the Japanese at the other, creeping forward and breaking through the walls of the houses in order to avoid exposure.

Such fights for localities where the bayonet was freely used have given rise to many exaggerated expressions of opinion about its advantages as a weapon to be used in assaulting strong positions.

Under cover of Oku's advance, Nogi with the Army of Port Arthur, left Sha-hei-bo, a little town west of Liao-tang, advancing at the rate of twenty-five miles a day and suddenly appeared on the left flank of Oku's army and completed the turning movement. Its presence was screened by the cavalry.

On the 1st of March Nogi's cavalry entered Ta-min-tun and a detachment reached as far as Hsim-min-ting. They encountered no serious resistance and the Russians apparently took them for Oku's troops.

On the 3rd Nogi had reached Ta-tzu-pu and La-mu-ho about twelve miles west of Mukden, and on the 4th his army had swung around so that his right came into line with Oku's left at Lik-wan-pau, and his left extended due north to Ta-shih-chiao, fifteen miles west of Mukden on the Hsin-min-ting road. During the next two days Nogi assisted Oku's attack against the Russian positions on the southwest of Mukden while pushing his own left still farther north, and on the 7th, keeping his right still pivoted on Lik-wan-pau, swung eastward, with a frontal development of fifteen miles.

This situation somewhat resembled that of the battle of the Sha-ho when Oku had turned Kuropatkin's right and Kuropatkin withdrew his troops from the center to meet him.

Nogi appears to have met at first with but little opposition. About one regiment on the 1st and a few small detachments on the 2nd. Mistchenko's cavalry had been allured to the north by a few Japanese squadrons which had cut the railroad north of Tie-ling.

When Kuropatkin heard of the movement on his right he sent two divisions of the Sixteenth Corps to oppose it. On the morning of the 3rd they encountered Nogi in force and were defeated. As the ground was frozen they could not entrench. On the 6th another Russian division attacked at Ta-shi-chio with the same results.

On the 7th the Russian reinforcements appeared at Tang-shih-tun and one division at Li-kwan-pu.

The Russian had constructed tier upon tier of entrenchments to the south and west of Mukden and Oku's progress was checked.

On the 7th Kuropatkin gave the order to withdraw to the line of the Hun-ho. On the morning of the 7th the commander of Kuroki's right division sent word that the enemy was moving a little. The Japanese entered the Russian works and found them empty. Kuroki then asked Nodzu if there were any signs of weakening in his front. Nodzu investigated and his soldiers were soon in the trenches which they had faced all Winter. During the night of the 7th Linevitch, and those forces of Kaulbars' that were east of Mukden, withdrew so rapidly that the Japanese did not catch up with their rear-guard until it was eight miles beyond the Sha-ho on the morning of the 8th.

Kuroki had begun the pursuit before midnight and Nodzu before 2 A. M. At 11 o'clock in the forenoon of the 8th Oku, after a desperate fight at Li-kwan-pu, drove back two Russian divisions with great loss, and broke through the defense which encircled Mukden on the south and west, and from an attitude of defense passed to that of vigorous pursuit.

At 8 A. M. on the 8th, the Russians evacuated Ma-chun-tun, and the Japanese pursued, reaching in the evening a line about six miles to the north.

On the 8th Nogi took possession of Hsiao-chi-tun, Pa-chia-tzu, and San-tai-tzu and destroyed the line of railway there. The Russians held a strong line of defense passing through Ta-ping-chuang and Pei-ling.

At noon the Russians began to retreat along the east side of the railway line north of Mukden, while a portion of the same force occupied a position on the west side of the railway to cover the retreat.

In falling back to the line of the Hun insufficient care was taken to preserve the touch, and the armies of Linevitch and

Bilderling left a wide gap between them which the Japanese were not slow to discover. The arrival of Bilderling's forces at Mukden led to a fearful accumulation of troops on a restricted space, where they gradually became exposed to the converging fire of the enemy, but Kuropatkin made a gallant effort to break the line, and is reported to have led in person an attack of sixty-five battalions following an earlier one by forty battalions.

On the 9th the Russians evacuated Ti-ta by night and at 3 A. M. the Japanese entered, but this column appears to have made but little progress on that day. The left column of Kawamura's army pursued the Russians to the banks of the Hun.

Kuroki reached the left bank at dawn, drove off the Russians from the right bank, crossed the river on the ice, and finding the weak point in the Russian line, between Bilderling and Linevitch, pushed on to northwest, a portion of his troops reaching the neighborhood of Hu-shin-pu and Pengchia-tou.

Nodzu drove back the Russians from Hun-ho-pu, and from some positions on the right bank of the Hun-ho, but was unable to force a passage.

Oku was unable to drive the Russians from the railroad bridge across the Hun. Nogi was unable to carry the strongly-entrenched position on his front, but extended his fighting line to the left to prevent the escape of the Russians. His left column was driven back a little by their counter attacks.

For fear that Bilderling and Kaulbars would be completely surrounded and captured, Kuropatkin ordered a general retreat at dusk on the 9th.

On the 10th, Kawamura's left column pursued the Russians who occupied the defensive works which they had prepared to the north of Fu-shun.

The ice in the middle of the Hun-ho there had melted, so that the river could only be crossed by bridges. The left column crossed and carried the heights. The right column reached the left bank in the evening.

On the 10th, Kuroki's right column, which had been sent to assist Kawamura in the attack on Fu-shan, crossed the Hun-ho and carried the heights north and northwest of Fu-shun and occupied a line passing from La-ni-wa to La-ma-kou. Kuroki's central column drove the Russians from Hsing-lung-

tien, and occupied Hu-shan-pu. His left column drove them from a redoubt on the heights northwest of Chin-tien and occupied the heights north and west of Ping-chia-tou. Its artillery poured a heavy fire upon the Russians retreating along the Tie-ling road and the railway and inflicted heavy losses on them.

The right column of Nodzu's army drove the Russians from Chi-hsien-fang and occupied the line from the east of Wang-chia-kou to Chao-chia-kou, and from the range of heights south of Wang-chia-kou attacked the Russians retreating along the Mukden road. A detachment of this column which crossed the Hun at a point northeast of Yang-kuan-tun fought its way to a line extending from the northwest of Yu-lin-pu, to Ehr-tai-tzu to intercept the retreat. Nodzu's left column crossed at a point a little to the west of Yang-kwan-tun and continued the pursuit.

Oku's army captured Ta-pu and Hsin-pu, and a general pursuit was then commenced by the whole line extending from Ma-tou, two and a half miles south west of Mukden to Si-ta Ta-ping and Hou-ta.

Nogi's army successfully resisted repeated counter attacks of the Russians, and subsequently was greatly extended so as to attack from north to south, occupying the line of the Pu-ho directly across the main line of retreat and astride of all the roads leading from Mukden to the North. The detachment which advanced towards Hu-ti-tai to intercept the retreat was attacked by about one division of the Russians, who tried to enclose the fighting line of the detachment and overwhelm it, but without success.

Portions of Nodzu's and Oku's armies occupied Mukden at 10 A. M.

The Japanese troops who had crossed the Hun-ho pursuing the enemy occupied on the afternoon of the 11th of March a line about twelve and a half miles north of the river.

On the 11th the pursuit continued, a Japanese detachment which marched north from the vicinity of Pu-ho encountered a large column of Russians retreating north and enveloped them, compelling them to surrender after a hand to hand fight. The total number of prisoners taken by the Japanese in this battle was estimated at 35,000.

On the 12th the column of retreating troops had reached a line twenty-five miles north of Mukden.

THE QUARTERMASTER'S DEPARTMENT AND THE ORGANIZED MILITIA*

BY LIEUT. COLONEL W. H. MILLER, UNITED STATES ARMY
DEPUTY QUARTERMASTER-GENERAL.



R. CHAIRMAN—AND GENTLEMEN OF THE NATIONAL GUARD ASSOCIATION:

There has devolved upon me by orders of the War Department, the duty of preparing and reading, in your presence, a professional paper which naturally concerns the branch of the service to which I belong—the Quartermaster's Department.

The duties of the Quartermaster's Department were epitomized by the Quartermaster-General, United States Army, in his last annual report, as follows:

“Briefly, they begin with supplying the recruit with his first army clothing and extend to providing and caring for the soldier's last resting place, and between these two extremes there is included all that is necessary to properly clothe, equip, shelter and transport, by land and water, the entire army, its supplies of every kind—all of its constituent parts.”

To the layman, this may not mean much; to the military profession, in general, the magnitude and variations of the duties are not clearly comprehended, but it is realized by every one that to supply nearly every want of the service, application must be made to the Quartermaster.

The duties of the Department being so vast and so varied, it is not practicable, in a paper of ordinary length, to fully describe them. Consequently this paper will be confined to what may be interesting to the National Guard when participating in joint maneuvers with troops of the army.

In undertaking this matter, I have determined to make my effort more a plain talk to you individually and collectively, than an essay on the subject in a more formal style. I think that the best theme for me to discuss is that which is peculiarly

*Paper prepared by Lieut. Colonel W. H. Miller, Deputy Quartermaster-General, U. S. Army, to be read before the National Guard Association at its meeting at Saint Paul, Minnesota, June 19th-21st, 1905.

interesting to the regiments, and incidentally to the battalions and squadrons of the National Guard; the Regimental Quartermaster and his assistants, the battalion or squadron quartermasters.

In consideration of the subject, on which I aim to make only general observations, I am somewhat handicapped by the reflection that it is a theme which admits of little that is new or of recent discovery. The National Guard of the present day is working on practical lines of military instruction under conditions assimilated as nearly as possible to those attending actual regular service. The Spanish War, the insurrection in the Philippines, and the Chinese relief expedition, besides adding interesting pages to modern history, have immeasurably increased the military importance of the organized militia of the United States, and their lessons will work for good should necessity again require the employment of armies in the field. There has been a great and useful increase in the general and special knowledge of those phases of the service which involve the application of the principles of transportation, supply and shelter, under the varying conditions to which the soldier is subjected, individually and *en masse*. The application of business principles to the necessary operations of the supply departments of the Regular Army and the Militia has been markedly apparent. The improvement of the methods which lead to promptness and general efficiency is very distinct. The simplification of procedure in delivering at the firing line all that the soldier requires to make him effective in the supreme hour of action is an accomplished fact. With the association of the regular troops and the militia in the camps of instruction and maneuver, initiated and conducted under the auspices of the general Government, and in the annual encampments of the State troops, the mutual interchange of ideas, and actual observation and practice, cannot fail to be helpful to both.

In the camp of instruction, when the regiment forms a part of a brigade, many of the details which would require the regimental quartermaster's attention under independent conditions will be arranged and controlled by the brigade quartermaster. The location of the camp will have been selected some time before its actual occupation by troops. The clearing of the grounds, cutting away and removal of underbrush, grasses and weeds, providing water supply, digging

trenches for latrines, contracting for and receiving fuel and forage, employing teams and wagons for camp purposes, and obtaining requisite supplies in general, the procurement of which comes within the province of the quartermaster, should be attended by a staff officer sent in advance to the camp to provide for everything in advance of the arrival of the command.

Assuming that the regiment is fully clothed and equipped with necessary tentage and other property required for use during the period of the encampment, the regimental quartermaster's first step, after he has received the order directing his regiment to participate in the joint maneuvers, will be to call upon each battalion quartermaster for a report, in duplicate, of the exact number of officers, enlisted men and animals, and weight of impedimenta for which transportation will be needed.

This report should show the station and strength of each company, the name and address of any officer, staff or line, to go with the battalion, but whose residence is at some other point than the location of one of the companies thereof; and also the names and rank of mounted officers and the number of horses that each officer will take with him, and the place from which the horses are to be forwarded.

One copy of this report should immediately be forwarded to the Chief Quartermaster of the Department (United States Army), who has been assigned to the duty of furnishing transportation for the troops to participate in the maneuvers, the second copy to be retained in the files of the regimental quartermaster's office.

This report is absolutely necessary so that transportation requests and bills of lading can be furnished the proper officers and necessary cars to move the commands obtained.

It should be understood that when troops move at the expense of the United States there is no law or regulation fixing the rates for the service, and in the absence of special rates, to be obtained in advance, customary tariff rates charged the general public, less land-grant deductions obtain. Hence, to secure favorable rates competition must be invited. This necessitates a knowledge of the numbers and places for whom and from where transportation will be needed, which information can best be furnished by the report indicated, and its early and accurate rendition is obvious, not only to economize

in cost but to conserve the comfort of the troops by obtaining proper facilities for their transportation.

It should be understood that disbursements of every character made by an officer of the United States are closely scrutinized by the auditors of the Treasury Department, and that to pass such scrutiny all vouchers and sub-vouchers thereto must be of due form and free from unexplained or uncertified alterations; hence, officers of the National Guard charged with filling in bills of lading and transportation requests should be very careful to state actual facts and dates thereon, and, if for any reason an alteration therein is made, to fully explain the cause thereof over their official signatures, either on the reverse side of the transportation request or on the face of the bill of lading. This, and due care to avoid errors, will obviate much correspondence and trouble to the officers concerned.

While the railway equipment in the United States is vast, the commercial demands often overtax its capacity, and much equipment may be needed to move troops at a time when it is fully employed in other traffic, so that it is best to limit the demands of actual necessities of the commands that proper accommodations for all may be had.

To comfortably move a battalion of infantry, for a journey, say, twenty-four hours, without being accompanied by its tents, ordinary camp equipage and mounts, requires one standard and six tourist cars, and one baggage.

For the transportation of squadron (four troops) of cavalry in addition to the cars for a battalion of infantry, sixteen horse cars and an additional baggage car for saddles are needed; and for the transportation of a light battery of artillery with 112 horses, four guns and eight caissons, three tourist, six horse, two baggage and five flat cars would be required.

Now if we come to move a regiment of infantry, a regiment of cavalry and one battery of field artillery, we find that there would be needed:

Six standard sleeping cars; thirty-nine tourist cars; eleven baggage cars; fifty-five horses (allowing one of these cars for the infantry regiment); five flat cars.

To preserve organizations, there would be:

One train of twelve cars; one train of thirteen cars; five trains of fifteen cars each; one train of sixteen cars.

In the Department of Dakota, the headquarters of which

is in St. Paul, Minn., the troops of the National Guard number a total of 3,302 organized.

In Minnesota.—Twenty-seven companies of infantry; two battalions of artillery; one company of engineers. Total strength, 2,042.

In Montana.—Seven companies of infantry; one battery of artillery. Total strength, 577.

In North Dakota.—One regiment of infantry; one battery of artillery. Total strength, 685.

To transport the officers and enlisted men of these commands, exclusive of their horses and impedimenta of any character, at least seventy passenger cars would be needed.

In the Department of the Lakes, headquarters in Chicago, the National Guard musters 24,715 officers and enlisted men, organized:

In Illinois.—Eight regiments of infantry; one regiment (eight troops) of cavalry; three batteries of artillery; one company of engineers; hospital and signal corps detachments. Total strength, 7,616.

In Indiana.—Three regiments and one unassigned company of infantry; three batteries of artillery; hospital and signal corps detachments. Total strength, 2,918.

In Kentucky.—Two regiments of infantry; engineer and signal corps detachments. Total strength, 1,620.

In Ohio.—Nine regiments of infantry; two troops of cavalry; four batteries of artillery; one battalion of engineers; two companies signal corps; and in Medical Department: two ambulance companies; three companies and two detachments of instruction. Total strength, 6,844.

In Michigan.—Three regiments and one battalion of infantry. Total strength, 2,791.

In Wisconsin.—Three regiments and one battalion of infantry; one troop of cavalry; one battery of artillery. Total strength, 2,926.

To transport the officers and enlisted men, exclusive of animals and equipage of any character would require about 530 passenger cars; hence, it will be apparent that to move troops by rail much equipment is needed, and to secure it great care should be exercised to limit each command to its actual necessities.

It is obvious that maneuvers cannot always take place at points where there are adequate terminal rail facilities—that

is to say, numerous side tracks and platforms. Therefore, and for practical field experience, it is best that impedimenta of every character, not absolutely to be used en route, should be forwarded, by freight, in advance of the troops. To this end, a detail, to consist of a commissioned officer, and say, ten enlisted men from each battalion, should be made, to conduct all the impedimenta and equipage to the designated camp as far in advance as practicable of the time the troops are to arrive there. This detail should be charged not only with conducting the impedimenta to camp, but to prepare it (this camp), as far as possible, for occupancy by the troops, and also, under the direction of the chief quartermaster of the maneuver division, to whom it should report in the first instance, to be on hand upon the arrival of the troops with necessary wagons to conduct each battalion to the camp previously prepared for it. This, or a similar detail, should be charged with packing and forwarding the impedimenta and equipage after the troops depart from camp to their home stations.

The value of these details will be found in the ease with which the commands can be entrained and detrained free from incumbrance. And, although this may not be a matter of quartermaster's administration, it would be a good thing if the officer in charge of this detail could be advised in ample time of the probable hour of arrival of the regiment at the camp. It often happens that troops arrive late at night, without anyone to meet them and conduct them to the camp, thus compelling an uncomfortable bivouac. This may be taken as one of the conditions which soldiers must learn to accept as part of the day's work, but I have never been able to assimilate the theory that hardship and exposure should form a portion of the preliminary training of the enlisted man. The miseries of campaigning may toughen the soldier, but they will often result in breakdown. To inure men to discomfort by compelling them to undergo hardship, when it is not absolutely necessary, is unwise. They should be protected from unnecessary privation, and put to the test of strength and endurance only when the supreme moment therefor has arrived. There is no use in breaking a man down in trying to find out whether he is capable of undergoing an extraordinary strain.

In the journey to the camp all officers residing apart from the station of a command should join their respective com-

mands at some station thereof, and all separate companies should join the battalions to which they belong at the nearest junction point en route, so that the troops shall arrive at camp in regular battalion organization.

Water barrels, to be furnished by the respective commands, should be securely placed on the platforms of the passenger cars, and guards stationed to see that the barrels are kept filled and covered and that the supply is not wasted.

Space for making coffee should be reserved in the front end of the baggage car, in which a field range should be set for the purpose.

The men should be instructed to depend upon the haversack en route, and bulky mess chests for other than camp use be avoided.

Before the train starts, after every stop en route, the rolls should be called, and if any absentees are found, the fact should be reported to the station agent, and he be requested to forward them on the first train following that of the command. Proper discipline will suggest that an absentee en-route should be severely dealt with.

Maneuver camps cannot, as a rule, be located at points where side-tracks and platforms are plentiful, and to move twenty-five trains, in and out, on a single track railway, in addition to its customary traffic, will consume nearly a whole day. This time will be greatly reduced if the troops are free of impedimenta, as platforms will not be necessary to entrain the infantry, which arm should be entrained first and be moved out of the way of the cavalry and artillery; as for entraining the two latter, platforms are of great convenience, but not of absolute necessity, as at least eight days' forage can be carried in the horse cars, and in cases of emergency the baled hay can be used in loading and unloading (particularly the latter) the horses of the cavalry and artillery from the cars with the aid of the movable partitions therein, but as the maneuver camp, while actually in the field, is of the character of a depot, or base, of what Chickamauga, Anniston and Tampa were in the war with Spain, ample facilities should be provided thereat for detraining and entraining the troops, and for means of transportation for all camp purposes.

When travel during the night, or for a long journey is necessary, standard sleeping cars should be furnished, one

berth for each officer, and tourist sleeping cars for the enlisted men, three men to be assigned to each section thereof.

Palace horse-cars, by reason of their facilities for feeding and watering the animals en route, and also for the quantity of forage that can be carried therein, should be preferred for the transportation of horses and at least two men, accustomed to horses, should be detailed to each car to care for the animals en route.

A baggage car should be ample for each battalion of infantry while en route; the baggage of each company being stored therein separately so that it can be readily reached, if it is necessary for one or more of the companies to detour en route.

For guns and caissons gondola cars should be avoided and flat cars, only, be used. They are readily loaded and unloaded while the sides of many gondola cars are fastened to the platform of the car and cannot be detached.

To prescribe rules to meet all conditions is impossible, and the best judgment of all officers, particularly the quartermasters, must be exercised to utilize such means as may be provided for the troops and to secure therefrom the greatest convenience and comfort of the commands.

Arrived at destination the quartermaster will be immediately concerned with getting his regimental belongings to the camp. The chief quartermaster of the division or brigade will, if proper notice has been given him, have such transportation as is necessary at the point of unloading from the train. Conditions, varying with the locality in which the encampment is held, may necessitate the use of hired transportation, including teams, wagons and drivers. The transportation will usually be directly controlled by the chief quartermaster of the division or brigade, but it may be assigned to the different regiments pro rata, especially if marches are on the programme in which the operation of the regimental train may play a part. Having unloaded passenger and baggage cars, and turned his back upon the iron horse, the quartermaster will find himself busily engaged in making order out of chaos, in completing the numerous details of business which he has anticipated and arranged for in advance, and in meeting and disposing of those which demand attention without previous acquaintance or introduction, the insistent and ever recurring emergencies. In the care of transportation,

in the receipt and issue to the animals of the daily forage allowance, in the attention to such requisitions for supplies as are needed by the troops in their temporary status, he will be profitably and busily engaged for the greater part of his time. He will have to depend upon subordinates, of course. It will be impossible for him to do it all, but not impossible to exercise a vigilant and systematic supervision which is worth much as an incentive to faithfulness and diligence on the part of his subordinates, and assistants, enlisted men and civilians.

You have all read about, heard of, or know of the trite phrase that "Poets are born, not made." I make this reference simply to emphasize what I have to say. Quartermasters are different—they have to be *builded*. I do not mean *built*, but b-u-i-l-d-e-d; that is, you must first find the proper material, and with that in hand proceed to produce a finished product in the shape of an all around man that can meet any emergency that may arise. There are not many of them, and they come high.

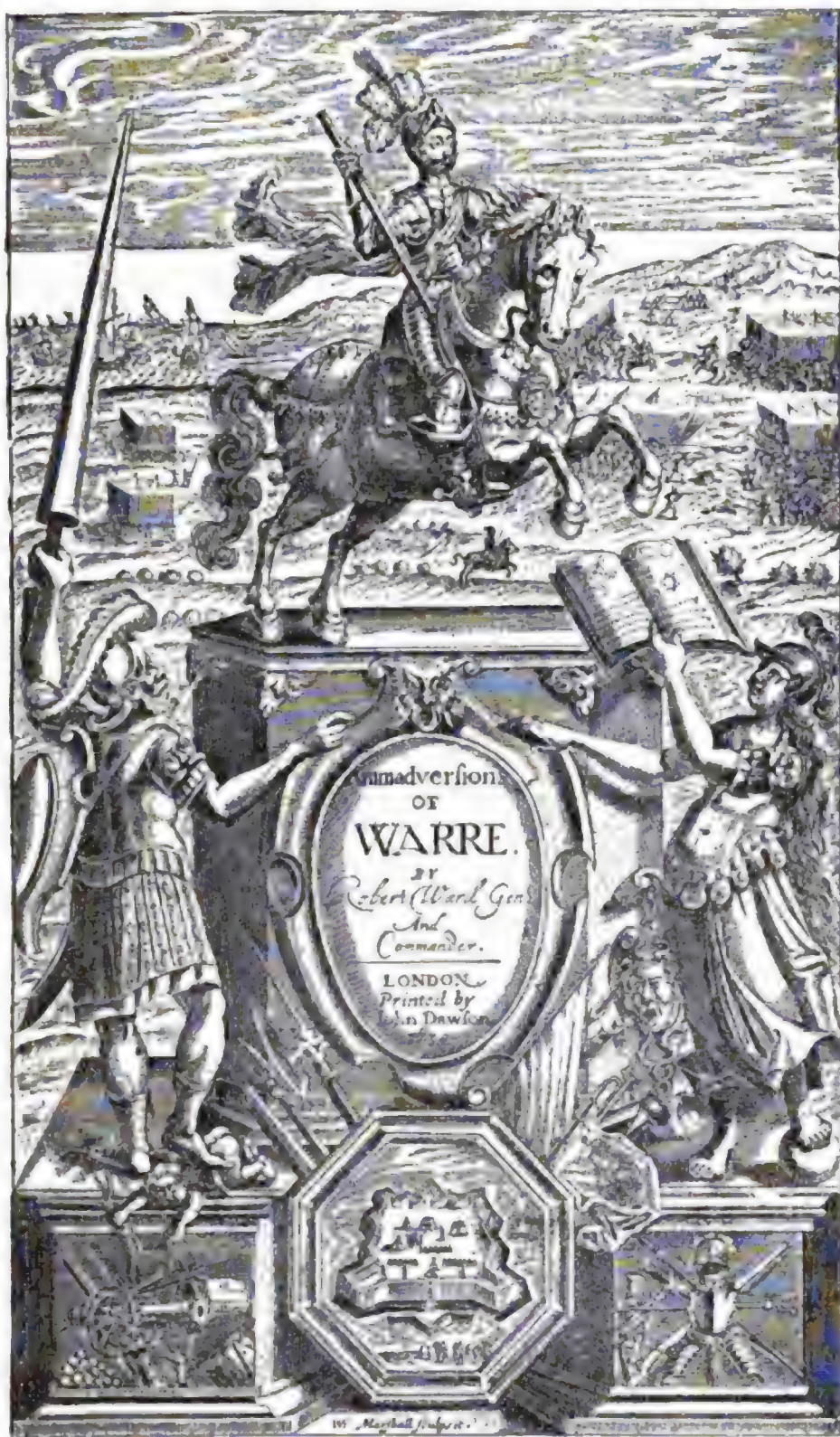
Assuming that all of you understand how important is the matter of transport and supply, I venture to indicate that the best material for the development of a battalion or regimental quartermaster, is what can be called a "line soldier," a man who has known the feel of the campaign hat; the crunch of the marching shoe, or that tired knee feeling that all cavalrymen are reluctant to admit. In other words, a quartermaster to be a good one, must have been in touch with the soldier, and must know his needs and his wants, afoot and horseback. Given the above described material, there is needed the absolutely essential spirit of "get there," sometimes, and appropriately called the "Yale spirit," a spirit that does things; a spirit that accomplishes results. With this start, there is nothing more needed than experience and an opportunity to do. All of the ways and means of the quartermaster's life come to the right man if you have selected that kind; if you haven't, it would be best to make another try.

It goes without saying that the duty of a regimental or battalion quartermaster is not a sinecure. He is there for business, not for pleasure or show. He must know his business. He must never be dependent on the quartermaster sergeant for the ready answer that his commanding officer has a right to expect to his inquiries at any and all times. He

must know all about clothing, clothing allowances, extra clothing, ornaments, chevrons of all kinds, tents, camp equipage, kitchen appliances in the field and in garrison; how to direct and assist in the supply of cooking fuel in the field, when there is apparently none in sight; how to "rustle" for his command, whether battalion or regiment, and get things.

In the field, en route from the home station to the maneuver camps and return, either by railroad or by marching, and while in the maneuver camps, it is necessary that the quartermaster, be he division, brigade, regimental, battalion or squadron quartermaster, should know all about his organization and its needs. He may lose more or less sleep over it, but that is what he is there for. The young officer who is selected by his colonel to look after the affairs of the quartermaster's department in his regiment will soon learn that the selection was not made for the purpose of providing him with a soft berth; the colonel's idea may have been to make things easy for some one, but that someone is certainly not the young man who is to roll the wheel and wield the pen which are symbolic of the department in which he is to display his energies. His efforts will be directed toward securing the comfort and effectiveness of his comrades, and the greater the sacrifice of physical and mental energy on his part, the greater will be the certainty of the perfect achievement of the purpose of his employment. Often, like the Israelites in bondage, he will be expected to make bricks without straw, and the tax upon his resourcefulness will be seemingly out of proportion to the means which nature and an economical appropriation place at his command. If he is of the right stuff, he will make the best kind of brick that is possible out of the material that is provided, or obtainable.

In actual experience, the quartermaster in the field may make up his mind to discount in advance the difficulties and dangers he will have to encounter. It will be satisfaction enough for him to know, *after* the delivery of the bullets to the firing line, that, even though he has only the bell mare left, there has been no delay in furnishing all necessary supplies to his command, before, during and after the battle. His work is then done—until to-morrow.



Historical Miscellany.



HENRY WAGER HALLECK,
Captain Corps of Engineers

TYPES AND TRADITIONS OF THE OLD ARMY.

II. GENERAL HALLECK—A MEMOIR.*

BY GENERAL JAMES GRANT WILSON, U. S. V.

LINCOLN'S authorized biography in commenting upon this appointment says: "It seemed at the moment the best that could be done. In his short Corinth campaign, Halleck had substantially demonstrated his unfitness for the leadership of an army in the field. He had made a grievous mistake in coming away from his department headquarters at St. Louis. He was a thinker and not a worker. His proper place was in the military study and not in the camp. No other soldier in active service equaled him in the technical requirements of his profession. The act of the President in bringing him to Washington restored him to his more natural duty. Nominally, he became general-in-chief, but in actual practice his genius fell short of the high duties of that great station. While he rendered memorable service to the Union, his judgment and resolution sometimes quailed before the momentous requirements of his office, and thrust back upon the President the critical and decisive acts which overawed him. In reality he was only what he afterward became by technical orders—the President's chief of staff."

Blaine assigns an additional motive for the appointment. He writes: "General Halleck, who had command of the Western Department, became anxious for reputation in the field, and was thought by many to be jealous of the daily increasing fame of General Grant. After the battle of Shiloh he took command in person of the army which Grant had already rendered illustrious, leaving Grant to command the right wing. Uniting the Western forces into one large army General Halleck marched southward in pursuit of the Confederate column now under command of Beauregard, and strongly intrenched at Corinth. As the army approached, Corinth was evacuated, and the campaign of General Halleck, leading to no important engagement, did not add to his military fame. Meanwhile, there had been increasing dissatisfaction in Congress and among the people with the superseding of General Grant, and to relieve the situation, General Halleck was called to Washington in the early part of July to take command of the army which had been relinquished by McClellan in March when he set forth upon the Peninsular campaign. In the intervening months there had been no general-in-chief of the army, the duties being performed by the Secretary of War."†

*Concluded from May JOURNAL.

†"Twenty Years of Congress from Lincoln to Garfield," by James G. Blaine, Vol. I, p. 363.

On General Halleck's arrival in Washington he immediately assumed command as General-in-Chief of the Armies of the North. Compelled to assume responsibilities that belonged to others, constantly thwarting the schemes of selfish men, and continued to be reticent upon public affairs which unscrupulous politicians and speculators desired to have divulged, Halleck was soon subjected to the shafts of the disappointed and disloyal men, and although with heart and soul devoted to the preservation of the Union, deeply regretted coming to the national capital. Writing to his wife, August 9th, he says: "I feel almost broken down every night with the heat, labor and responsibility. The President and Cabinet have thus far approved of everything I have proposed. This is kind and complimentary, but it only increases my responsibility, for if any disaster happens they can say we did for you all you asked. The great difficulty is to get the troops together in time. I have felt so uneasy for some days about General Pope's army that I could hardly sleep. I cannot get General McClellan to do what I wish. The President and Cabinet have lost all confidence in him and urge me to remove him from command. This is strictly *entre nous*. In other words, they want me to do what they were afraid to attempt! I hope I may never be obliged to follow their advice in this matter." Later Halleck writes to Grant: "I sincerely wish I was with you again in the West. I am utterly sick of this political Hell." On September 5th he writes to Mrs. Halleck: "I got McClellan's army here just in time to save us. Few can conceive the terrible anxiety I have had within the past month. I foresaw all that has occurred, but I feared to tell it to more than a few in strict confidence lest I should produce a panic. * * * * * Our real danger—the capture of Washington—I think is now past. * * * * *

I hardly know how I am able to keep amidst the excitement and labors of my office. The generals all around me are quarreling among themselves, while I am doing all in my power to conciliate and satisfy. It is sad to witness the selfishness of men at this time of sore trial. * * * * *

I want to go back to private life as soon as possible and never again put my foot in Washington." October 7th the general writes to his wife: "Everything would now be satisfactory if I could only get General McClellan to move. He has lain still *twenty days* since the battle of Antietam, and I cannot persuade him to advance an inch. It puts me out of all patience." November 9th he writes to Mrs. Halleck: "The news of General McClellan's removal is probably making a great stir in New York to-day. * * * * *

It became a matter of absolute necessity. In a few weeks more he would have broken down the Government."

Of McClellan's repeated failure to obey the General-in-Chief's orders, his latest extremely able and most impartial biographer* says:

It subjected McClellan to the severest criticism, even to the extent that he was actuated by the desire of seeing Pope defeated in order that he might be rehabilitated in supreme military command. And even at this late day there exists a wide diversity of settled opinion between the partisans of both generals as to the motives of McClellan—opinions that received their initial direction at the time of the impending crisis and which have become crystallized by passionate denunciation, injustice and the inability of men upon whom vast responsibilities were then committed accurately to gauge the springs of each other's action. In attempting to reach a rational solution we may with propriety assume that all the great actors were loyal patriots, much more concerned with the success of the cause than with their personal and professional fortunes. But this concession does not forbid the assumption of the hypothesis that Halleck, McClellan and Pope may each have entertained altogether different views as to the situation and military necessities of the time. McClellan has left on record the expression of his extreme distrust of Pope's military ability, and Pope had severely criticized that of McClellan in his testimony before the Committee on the Conduct of the War. Halleck had assured Pope also that he might with certainty expect the arrival of the reinforcements from the Army of the Potomac some days before they actually came. The delay that ensued in the execution of this promise caused Pope to feel that he was not willingly supported by McClellan, but this is now known to have been entirely unwarranted in point of fact.

Professor Michie also writes the following paragraph concerning McClellan's attitude toward General Halleck's instructions:

The foregoing quotations from Halleck's and McClellan's dispatches suffice to show that these two commanders had a very different view of the problem then confronting them, and consequently were often at cross purposes in their attempts to solve it. Uppermost in McClellan's mind was the imminent danger of the loss of Washington, and while he knew nothing of what had happened to Pope he was not apprehensive of the ultimate safety of his army, believing that, if defeated, he had an avenue of escape by way of the Occoquan. But the safety of Washington was a matter of supreme importance, and he felt that all his efforts should primarily be directed to that end. In addition to this, if we give due weight to the habit he had of overestimating the numbers and activity of the enemy, we will have a logical explanation of his conduct, which is in perfect keeping with all the characteristics that he had heretofore exhibited. These characteristics made him antagonistic to any aggressive movement toward Centreville, where the enemy were reported in force, and were in accord with that cautious preparation for defense of the line which was then vulnerable, and which, to his mind, it was so essential to hold. Halleck, on the other hand, by devoting the greater part of his time and energy to matters less of immediate importance, such as those connected with affairs in the West and raising new troops, failed to give that controlling and directing atten-

*"General McClellan," by Gen. Peter S. Michie, *Great Commanders Series*, New York, 1901.

tion to the crisis which was then involving the safety of Pope's army, an attention which was especially incumbent upon the general-in-chief at that time.

"The dispatches of Halleck," writes a historian of the period, "even after he became aware of the finding of Lee's lost order, conveyed to McClellan poor and superfluous counsel. His fears for the safety of Washington, his anxious suggestions of caution, showed blindness to McClellan's great fault, and no proper comprehension of the strategy needed in this campaign. Compare the division of authority among Halleck, McClellan and Wool, accompanied undoubtedly by pressure from the President and Secretary of War, with the management of the other side, where a single head directed all movements. Lee was supreme."*

While in obedience to the President's orders, the General-in-Chief in repeated dispatches urged Meade to attack Lee after Gettysburg. Halleck sent him the following telegrams inconsistent with the tone of the others. "Do not be influenced by any dispatch from here against your own judgment. Regard them only as suggestions." His second communication was even stranger: "I think it will be best for you to postpone a general battle until you are better prepared."

Moved by General Burnside's representations, in January, 1863, that Stanton and Halleck had not the confidence of the army, nor in his judgment of the country, and failed to assume the responsibility that was unquestionably theirs of giving him explicit orders after the Fredericksburg failure, Lincoln, with pardonable irritation, wrote to Halleck requesting him to come to some decision in regard to Burnside's plan of advance, which did not commend itself to the President, who said: "Your military skill is useless to me if you will not do this." This was followed by an offer of his resignation by the General-in-Chief, and the withdrawal of the letter by Lincoln "because considered harsh by General Halleck." At this time Sherman wrote to his brother—the senator—in regard to the severe criticism of Halleck: "I hope the politicians will not interfere with Halleck." A member of the class of 1835† writes in 1901: "There is, and has been, a widespread misapprehension in regard to the interference of Halleck with the generals in command of armies in the field, and he has been censured by the press for giving orders that trammelled their liberty of action and resulted in disaster. This, I think, is an error, and does him great injustice. General Halleck has been severely censured for the orders given to Meade after the battle of Gettysburg. I am, perhaps, responsible for these orders more than any one else. At my interview with Meade on the next morning after Lee's retreat, I felt sure that if the rest of several days which he proposed to take were really taken,

*"History of the United States," by James F. Rhodes. 1800. Vol. IV, p. 147.

†Reminiscences of Gen. Herman Haupt, p. 302

the enemy would escape, and I urged General Halleck to give orders to commence pursuit immediately and prevent Lee from effecting a crossing of the Potomac back into Virginia. When Lee did escape, it was natural that great dissatisfaction should be felt, and it was to have been expected that such dissatisfaction should also be expressed when the fruits of the splendid victory at Gettysburg had been lost by inaction."

General Halleck continued to perform the duties of his office as general-in-chief until Congress revived the grade of lieutenant-general, and that rank was conferred on General Grant for his glorious campaigns of Vicksburg and Chattanooga, when he insisted that compliance should be made with the obvious intention of the law, and that being senior, Grant must of course become General-in-Chief. Soon after the President made the following changes, Halleck becoming Chief of Staff to the army, which position he occupied until the close of the Civil War. (See facsimile of G. O. 98 as follows):

GENERAL ORDERS, }
No. 98. }

WAR DEPARTMENT,
ADJUTANT GENERAL'S OFFICE,
Washington, March 12, 1864.

The President of the United States orders as follows:

I..Major General H. W. HALLECK is, at his own request, relieved from duty as General-in-Chief of the Army, and Lieutenant General U. S. GRANT is assigned to the command of the Armies of the United States. The Headquarters of the Army will be in Washington, and also with Lieutenant General GRANT, in the field.

II..Major General H. W. HALLECK is assigned to duty in Washington, as Chief of Staff of the Army, under the direction of the Secretary of War and the Lieutenant General Commanding. His orders will be obeyed and respected accordingly.

III..Major General W. T. SHERMAN is assigned to the command of the Military Division of the Mississippi, composed of the Departments of the Ohio, the Cumberland, the Tennessee, and the Arkansas.

IV..Major General J. B. MCPHERSON is assigned to the command of the Department and Army of the Tennessee.

V..In relieving Major General HALLECK from duty as General-in-Chief, the President desires to express his approbation and thanks for the able and zealous manner in which the arduous and responsible duties of that position have been performed.

BY ORDER OF THE SECRETARY OF WAR:

E. D. TOWNSEND
Assistant Adjutant General.

OFFICIAL:

A month later General Halleck was assigned to the command of the Cavalry Bureau in addition to his important and responsible duties as chief of the army staff.

During Early's invasion of Maryland, Brigadier-General West sent a telegram from Philadelphia, inquiring of Halleck if he could be of any service in that vicinity, to which the chief of staff—possibly having in mind the proposal of Artemus Ward to raise a company composed "exclusively of officers, everybody to rank as brigadier-general" sent the following spicy reply: "We have five times as many generals here as we want, but are greatly in need of privates. Anyone volunteering in that capacity will be thankfully received."

Four months after General Halleck assumed his new position of chief of staff, and following the termination of General Early's raid upon Washington, the former, exasperated by the report of sarcastic comments which Montgomery Blair the Postmaster-General, under the provocation of the destruction of his property near Washington, had made on the cowardice of the defenders of the Capital, sent a note to the Secretary of War saying that he wished to know "whether such wholesale denouncement and accusation by a member of the Cabinet receives the sanction and approbation of the President of the United States. If so," Halleck continued, "the names of the officers accused should be stricken from the rolls of the army; if not, it is due to the honor of the accused that the slanderer should be dismissed from the Cabinet." The communication was forwarded without comment to Mr. Lincoln. The President replied to Stanton the same day, saying: "Whether the remarks were really made I do not know, nor do I suppose such knowledge is necessary to a correct response. If they were made, I do not approve them; and yet, under the circumstances, I would not dismiss a member of the Cabinet therefor. I do not consider what may have been hastily said in a moment of vexation, at so severe a loss, is sufficient ground for so grave a step. Besides this, truth is generally the best vindication against slander. I propose continuing to be myself the judge as to when a member of the Cabinet shall be dismissed." Not content with this, at the next meeting of his Cabinet, Lincoln read them the following impressive paragraph, one of the most remarkable statements ever made by a President. As his chief biographers remark: "The tone of authority is unmistakable. Washington was never more dignified; Jackson was never more peremptory." He said: "I must myself be the judge how long to retain in and when to remove any of you from his position. It would greatly pain me to discover any of you endeavoring to procure another's removal, or in any way to prejudice him before the public. Such endeavor would be a wrong to me, and, much worse, a wrong to the country. My wish is that on this subject no remark be made, nor question be asked by any of you,

here or elsewhere, now or hereafter." A few months later Mr. Blair was dismissed, and his place filled by the appointment of Governor William Dennison, of Ohio.

Later Halleck prevented the powerful and impatient Grant from removing Thomas. The Administration was also impatient. Stanton, in a whimsical strain, suggests to General Grant: "If he (Thomas) waits for Wilson to get ready, Gabriel will be blowing his last horn." The following day, December 8, 1864, Grant sends this message to Halleck: "If Thomas has not struck yet he ought to be ordered to hand over his command to Schofield." To this the Chief of Staff replies: "If you wish General Thomas relieved, give the order. No one here will, I think, interfere. The responsibility, however, will be yours, as no one here, so far as I am informed, wishes General Thomas relieved." The omnipotent Grant hesitated. Halleck's dispatch saved Thomas. Six days later the country was electrified by his glorious victory at Nashville, one of the greatest won by the North during the Civil War. Hood was not only defeated, but his army was destroyed.

In February, 1865, it was charged by General Wade Hampton, and other Southerners, that Sherman permitted the burning of Columbia, the capital of South Carolina, if he did not order it directly. The correspondence between Generals Halleck and Sherman was cited by Confederate writers to show premeditation on the part of the latter. "Should you capture Charleston," wrote Halleck, December 18, 1864, "I hope that by some accident the place may be destroyed, and if a little salt should be sown upon the site it may prevent the growth of future crops of nullification and secession." Six days later General Sherman replied: "I will bear in mind your hint as to Charleston, and don't think salt will be necessary. When I move, the Fifteenth Corps will be on the right of the right wing, and their position will bring them naturally into Charleston first; and if you have watched that corps you will have remarked that they generally do their work up pretty well. The truth is, the whole army is burning with an insatiable desire to wreak vengeance in South Carolina. I almost tremble at her fate, but feel that she deserves all that seems in store for her. I look upon Columbia as quite as bad as Charleston."

As to the manner in which Halleck performed the duties of his position in Washington during a trying period of nearly three years, we have the accompanying testimony of an accomplished British writer, Colonel Chesney, who, in his "Military Biography," writes: "Great praise had been justly bestowed on Sheridan for his nervous and energetic conduct in pursuit by which Lee was finally cut off. Nor less does Grant deserve it for the free and ungrudging manner in which he supported his ardent lieutenant. But he who, above all, should have earned honor for the conduct of that march now

sleeps in the grave; and it is due here to the reputation of General Halleck to say that to his stern and unflinching insistence on the necessity of bringing proper discipline to bear on the Federal volunteers was due much of the success with which the arms of the Union were crowned at the close of the war. Soldiers are ever dependent largely for their feeling of subordination on the conduct of those above them, and the improvement effected by Halleck's stern measures extended constantly downward. The Army of the Potomac, which was at once the newest and most important of those which as Chief of the Staff he supervised, rose that year in its standard of discipline, if not to the level to which Europe, with the aid of caste traditions and reverence for rank, brings her standing forces, at least to a measure of efficiency which troops recruited as were these, the mixed volunteers and conscripts of a young republic, can seldom attain. And if Grant and Sheridan were able to press the success of Five Forks on to a complete triumph over the retreating Confederates; if the conduct of their troops after the victory of the second of April was in marked contrast to the lassitude and indifference which had hitherto followed advantages won on either side—the difference is to be found, not so much in the circumstances of the time, or the individual characters of the generals, as in the moral power of discipline, which had been left unused by both parties alike until Halleck brought it into play to add to the advantages of the North."

April 19, 1865, after Appomattox, when Grant's headquarters were established in Washington, General Halleck was relieved from duty as Chief of the Staff of the Army, and three days later he was assigned to the command of the Military Division of the James, with headquarters in the city of Richmond. Grant had established his headquarters in Washington, and transferred to Halleck command of the Armies of the Potomac and the James. In this capacity, filled with new zeal on the occasion of the Johnston Convention, Halleck had ordered Meade's army, disregarding the truce, to push forward against Johnston and to attack him, regardless of Sherman's orders. These orders, though they were nullified by the surrender, had injudiciously been published. This new insult completed the measure of Sherman's anger. He broke out in open defiance of the authorities, who he thought were persecuting him with deliberate malice, and declared in a report to Grant that he would have maintained his truce at any cost of life. When Grant suggested that this was uncalled for, and offered him an opportunity to correct the report, Sherman refused to do so, avowing his readiness to obey all future orders of the President and the general, but insisted that his record should stand as written. He declined to meet Halleck in Richmond, and warned him to keep out of his way, and on ar-

living in Washington publicly refused the proffered hand of Stanton at the grand review of the armies.* Happily, amicable relations were restored between these three patriotic Americans before they passed away. Hostilities having entirely ceased, and the volunteer forces mostly disbanded, Halleck was relieved from duty in Virginia and ordered to the Military Division of the Pacific, of which he took command August 30th, with headquarters in his former home, San Francisco. "The only trouble," writes Sherman in December, 1868, after Grant's election as President, "is in my successor. Halleck is out of the question; Meade comes next on the list, but is not a favorite. Sheridan comes next in order, and is Grant's preference, *I think*. Thomas could not be passed over if by the accidents of war Sheridan had not *already got over him*. Thomas is universally esteemed, but was not made a major-general till his battle at Nashville, whereas Sheridan, at least thirteen years younger in service, was made a major-general for his Winchester battle, the summer previous. So I think Sheridan will be chosen by Grant as lieutenant-general."

Here Halleck remained for nearly four years, when on March 16, 1869, he was transferred to Louisville,† being in command there from June 17th, to the time of his death in that city on January 9, 1872. His brother-in-law, General Hamilton, writes under date of August 21, 1902: "Our friendship was lifelong. He died in my arms and was buried in his plot in Greenwood Cemetery where his wife and son rest by his side. I bought the plot for him. It was to be near mine, for he made the quaint remark at the time: 'When I rise at the resurrection, I wish to see some of those who have been my friends in this life arising with me.' He was survived by Mrs. Halleck, a granddaughter of Alexander Hamilton, to whom he was married in 1855, and by their only child, Henry Wager, born in 1856.

Bishop Whipple, in his autobiography writes: "Halleck was a man of unflinching integrity, a hater of shams, and never considered policy in his actions. From the beginning of the Civil War he was loaded down with responsibilities which carried him to the grave. His first command was in Missouri where he brought order out of confusion, and saved Missouri from secession. His next command was in Missis-

*Nicolay and Hay's "Life of Lincoln," Vol. X, p. 254.

†Gen. George H. Thomas, who succeeded Halleck on the Pacific Coast, writes to him under date of Washington, D. C., March 16, 1869: "In the general break-up incident to a new administration, I find myself assigned to the command of the Military Division of the Pacific, and that you have been assigned to the Military Division of the South, with headquarters at Louisville, Ky. I learn at Army Headquarters that this assignment was insisted on by the President, and General Sherman informed me that he could not therefore choose, but give the order effect. This being the situation of affairs, I have written to say that I am directed to obey the order as soon as the Court of Inquiry for the investigation of charges against General Dyer has completed the duties assigned it. It will take us all of this month and perhaps part of April to complete our duties, so that I shall be able to start about the first of May."

sippi, where he won from his troops the sobriquet of 'Old Brains.' He was general-in-chief for a time, and afterward chief of staff to President Lincoln, whose confidence he retained throughout that eventful struggle. He was brusque in manner, and often made bitter enemies. I remember upon one occasion, when I was his guest, a prominent politician called upon him and said: 'I have asked the President to appoint three persons brigadier-generals. They are loyal men and deserve recognition. The President tells me that he has promised you and Secretary Stanton that he would not appoint men to high office in the army without your approval. I am here to consult you. Do you oppose their appointment?' The general turned with flashing eyes and exclaimed: 'I *am* opposed to their appointment! You cannot run this war machine with *political* gas.'

Some months later the Bishop was invited to visit General Meade at his headquarters on the Rapidan. During his sojourn the general told his visitor that during the previous summer, some person, one night, came to his tent, and to the demand "Who's there?" a voice answered, "General Townsend" (the assistant adjutant-general). "I come to bring you a new burden. I have a commission for you as Commander of the Army of the Potomac." He also handed Meade a letter from General Halleck, pledging him the hearty support of the Government. On the Bishop's return to Washington, his kinsman gave him the following interesting account of the circumstances which led to Meade's appointment. Halleck said: "After the defeat of General Hooker at Chancellorsville, President Lincoln met the Secretary of War and myself at the War Department. He asked 'Whom shall we appoint commander now? We cannot run Joe any more.' I told the President that I had tried to feel the pulse of the army, and I believed that General Meade was the man to appoint, but I also mentioned several other names, among them that of General Sedgwick, one of the ablest men in the service. The President proposed that we should ballot. Mr. Stanton voted for General Sedgwick, and the President and I voted for General Meade."

Grant's comments on his intercourse with General Halleck during the Civil War, as expressed to a friend a few years before the illustrious soldier's death, are valuable as his final judgment of Halleck's character, and of his services to his country. "In the early part of the war," said the conqueror of Lee, in 1879, "Halleck did very good service for which he has never received sufficient credit—I mean in his civic administration. Some of his orders were in anticipation, I think, of those of Butler, which gave him so much fame in New Orleans. He was, in addition, a very able military man. Halleck had intellect and great requirements outside of his military education. He was at the head of the California bar when the war broke out, and his appointment to the major-generalsy was a gratification to all who

know the old army. When I was made lieutenant-general, Halleck became chief of staff to the army. He was very useful, loyal and industrious, sincerely anxious for the success of the country, and without any feeling of soreness at being superseded. In this General Halleck was a contrast to other officers of equal ability who felt that, unless they had the command they craved, they were not needed. Halleck's immense knowledge of military science was of great use to those of us in the field. * * * * *

After Fort Donelson I was in disgrace, and practically without a command, because of some misunderstanding on the part of Halleck. *It all came right in time.* I never bore Halleck ill will for it. He was in command, and it was his duty to command as he pleased."* Later in his "Memoirs," Grant wrote: "With all the pressure brought to bear upon them both, President Lincoln and General Halleck stood by me to the end of the (Vicksburg) campaign," speaking of the strong efforts made by the friends of other commanders for his removal. Grant told me that Halleck disapproved of his proposed movement after the capture of Vicksburg against Mobile, but later suggested his taking command at Chattanooga; also that soon after his arrival in Washington, when he said that he wanted a capable cavalry commander, Halleck suggested Sheridan. In conclusion the general remarked: "Halleck was an able and honest man, but was brusque and never popular, neither as a cadet at West Point, nor in the army."

Halleck's chief of staff, Gen. George W. Cullum, who married his widow, thus describes him: "Halleck had a strong, clear intellect, which enabled him to take a comprehensive grasp of the various important matters presented to his consideration, and was sustained in his conclusions by a most assiduous industry and self-reliant perseverance. Indeed, determination was his most marked characteristic, evinced in a calm firmness which neither entreaty nor persuasion could move from his fixed purpose. Of such a nature caution would be a prevailing quality. With those were united a modesty, almost shyness, and thus, perhaps, he did himself injustice, as his sensitiveness to the value of sincerity caused him often to repel rather than be deemed insincere. This known temperament secured him the most valuable estimation of his instructed and ablest fellow officers. His dryness of manner was no argument of want of heart, for indeed he was a warm, true, loyal friend, and in the inner circle of his life was tender and playful, showing a keen sense of humor. His home was a scene of perfect happiness, and kind hospitality. Of children he was fond, had an ardent love of Nature, and indulged the expectation of closing his latter years in a retreat in the beautiful region south of San Francisco, looking on the Pacific Ocean."†

*"Around the World with General Grant," by John Russell Young. 1879.

†"Biographical Register of the Officers and Graduates of the United States Military Academy," 1891, p. 739.

Under date of September 29, 1902, Gen. Joshua H. Bates, of the class of 1837, writes: "General Halleck was a personal friend whom I greatly respected. He was very popular and highly esteemed at the Military Academy, always occupying a position among the first five of his class. After my graduation we did not meet until after the battle of Shiloh, where he was in command when I visited the scene. When he was placed at the head of the army I had frequent interviews with him on public affairs and always found him wise and courteous. I know General Halleck was highly esteemed by President Lincoln and I have never heard a word disparaging him. He was a true man."

After almost four decades it appears to be still the fashion to abuse General Halleck. The illustrious soldiers, Grant and Sherman, had grievances against him, and the public, sympathizing with the popular heroes, became prejudiced against the brusque captain, who disdained to defend himself. It is not the writer's purpose to reopen the misunderstandings of the two great commanders, and others, with their military superior, and I will merely remark that it is difficult to reverse the received verdicts of popular opinion. As a wise man once said, the process of whitewashing involves so much blackwashing that it had better be left for Halleck's military dispatches of the Civil War period, included in 132 volumes of official Rebellion records issued by the Government, to vindicate his memory. These documents, I believe, will be successful in reversing, in a measure, many prejudiced judgments of the patriotic and scholarly soldier who sacrificed his life in the earnest, loyal and unselfish efforts to maintain and uphold the integrity of the National Government. Great men not infrequently have great faults, and to ignore them is to falsify history. Freedom from infirmities is not claimed for the General-in-Chief, but it would seem that his shortcomings have been grossly exaggerated. Halleck, it will be remembered, held several important positions during the Rebellion, first as chief commander in the West, as general-in-chief at Washington, later chief of staff to the President, and then as commander of the Military Division of the James, with headquarters at Richmond. Many orders of the President and the Secretary of War were issued by the Chief of Staff of which he did not approve, and for which he was held responsible by the people, and severely criticized. As in the Early raid on Washington of July, 1864, Halleck was unjustly condemned for avoiding responsibility which he was not certain that he was warranted in taking, when his three military superiors, Lincoln, Grant and Stanton, were on the spot, or near at hand. Nicolay and Hay, in Lincoln's biography, remark: "General Grant's distance from the scene and lack of perfect knowledge of the situation; the President's unwillingness to interfere with his orders, and Halleck's reluctance to assume authority which he believed did

not belong to him, were the causes to which may be attributed the unsatisfactory progress of affairs during this discouraging midsummer season." Another instance of injustice to Halleck was in regard to the order which he issued while in Richmond to certain officers "to pay no regard to any truce or orders of General Sherman respecting hostilities, on the ground that Sherman's agreement could bind his own command only, and no other," and "to push onward, regardless of orders from any one except General Grant, and cut off Johnston's retreat." The responsibility for this order was *not* Halleck's, but his superiors."

General Halleck might have truthfully echoed the words of Stanton in assuming the office of Secretary of War: "Turning to neither the right hand nor to the left, serving no man, and at enmity with none, I shall strive to perform my whole duty in the great work before me. Mistakes I may commit, but the purpose of my actions shall be single to the public good."

As an addenda to the preceding brief biography, a number of General Halleck's letters follow, including an interesting series of sixteen letters, or parts of letters, written to Mrs. Halleck, and never before printed, together with valuable communications addressed to Halleck by Lincoln, Grant, Meade, Hooker, and other prominent persons of that eventful period.

APPENDIX.*

[R] GENERAL HOOKER TO GENERAL HALLECK.
HEADQUARTERS ARMY OF THE POTOMAC.

June 24, 1863.

MAJOR-GENERAL HALLECK: The aspect of the enemy is not much changed from yesterday. Ewell, I conclude, is over the river, and is now up the country, I suppose, for purposes of plunder. The yeomanry of that district should be able to check any extended advance of that column, and protect themselves from their aggression.

Of the troops that marched to the river at Shepardstown yesterday, I cannot learn that any have crossed, and as soon as I do shall commence moving myself, and indeed am preparing by new acquisitions for that event, the others are ready.

General French is now on his way to Harper's Ferry, and I have given directions for the force at Poolesville to move and report to him, and also for all of Stahl's cavalry, and if I can do it without attracting observation I shall send over a corps or two from here, in order, if possible, to sever Ewell from the balance of the rebel army, in case he should make a protracted sojourn with his Pennsylvania neighbors.

If the enemy should conclude not to throw any additional force over the river, I desire to make Washington secure, and with all the force I can muster strike for his line of retreat in the direction of Richmond. I cannot learn the strength of Heintzelman's and Schenck's commands, nor where they are stationed, and hence I send my chief of staff to Washington and Baltimore to ascertain, and also

*Continued from May, page 559

to start out a column of about fifteen thousand men on the national road as far as Frederick City. In any contingency, whether of an advance or retreat of the enemy, the defense of Washington or Baltimore, this amount of force should be there, and they should be held in readiness to march, which fact I will not be able to know until I put them on the road. I will send the best officers I have to command this body.

I desire that instructions may be given Generals Heintzelman and Schenck to direct their commands to obey promptly any orders they may receive from me. Last evening the colonel commanding at Poolesville responded to his orders to march, that he did not belong to my command, but would refer his orders to General Heintzelman. Such delays may bring us reverses. When these instructions are given I shall not be necessitated to repeat orders to any part of my command to march on the enemy.

Allow me to suggest that the new troops arriving in Baltimore and Washington be at once put in the defences, and the old ones, except those serving with the artillery, be put in marching condition. If this should be done, and quickly, I think that we may anticipate glorious results from the recent movement of the enemy, whether he should determine to advance or retreat. I request that my orders be sent me to-day for outside of the Army of the Potomac I don't know whether I am standing on my head or feet.

Very respectfully, &c.,

JOSEPH HOOKER,
Major-General, Commanding.

* * * * *

[S] GENERAL HALLECK TO MAJOR-GENERAL GRANT, Vicksburg.

(Private and confidential.) HEADQUARTERS OF THE ARMY,

Washington, July 11, 1863.

MY DEAR GENERAL: Gen. G. G. Meade has been appointed a brigadier-general in the Regular Army at the same time that you are made a major-general. There is still one vacant brigadier-general, and I hope that Harney, Cooke and Anderson will soon be retired, making three more vacancies.

The most prominent candidates at present for brigadier-generals in the Regular Army are W. T. Sherman, McPherson, Thomas, Sedgwick and Hancock. I am of the opinion that Sherman and McPherson have rendered the best service, and should come in first. If you think so, write an official letter to that effect, urging their appointment to the first vacancies. State their services pretty fully, and mention the battles that they have been in under your command. The feeling is very strong here in your favor, and there will be a strong disposition to grant any favor you may ask for your generals.

We are anxiously waiting to hear of the fall of Vicksburg, Port Hudson, etc., and the entire opening of the Mississippi River. The President will then issue a general order congratulating the armies of the East and West on their recent victories. This consideration has prevented me from issuing one myself for your army. I prefer that it should come from the President.

Meade has thus far proved an excellent general—the only one in fact who had ever fought the Army of the Potomac well. He seems

to be the right man in the right place. Hooker was worse than a failure. Had he remained in command he would have lost the army and the capital.

Give my kindest regards to my old friends among your officers. I sincerely wish I was with you again in the West. I am utterly sick of this political hell.

Very truly yours,

H. W. HALLECK.

[T] GENERAL HALLECK TO GENERAL MEADE.

HEADQUARTERS OF THE ARMY,

Washington, July 28, 1863.

MAJOR-GENERAL MEADE,

Army of the Potomac, Warrenton, Va.:

GENERAL: I take this method of writing you a few words which I could not well communicate in any other way. Your fight at Gettysburg met with the universal approbation of all military men here. You handled your troops in that battle as well as, if not better than, any general has handled his army during the war. You brought all your forces into action at the right time and place, which no commander of the Army of the Potomac has done before. You may well be proud of that battle. The President's order, or proclamation, of July 4th, showed how much he appreciated your success.

And now a few words in regard to subsequent events. You should not have been surprised or vexed at the President's disappointment at the escape of Lee's army. He had examined into all the details of sending you reinforcements, to satisfy himself that every man could who possibly be spared from other places had been sent to your army.* He thought that Lee's defeat was so certain that he felt no little impatience at his unexpected escape. I have no doubt, General, that you felt the disappointment as keenly as any one else. Such things sometimes occur to us without any fault of our own. Take it altogether, your short campaign has proved your superior generalship, and you merit, as you will receive, the confidence of the Government and the gratitude of the country.

Very respectfully, your obedient servant,

H. W. HALLECK.

* * * * *

[U] GENERAL MEADE TO GENERAL HALLECK.

HEADQUARTERS ARMY OF THE POTOMAC,

July 31, 1863.

MAJOR-GENERAL HALLECK, *General-in-Chief.*

MY DEAR GENERAL: * * * * * The expression you have been pleased to use in your letter—to wit, "a feeling of disappointment"—is one that I cheerfully accept, and readily admit was as keenly felt by myself as any one. But permit me, dear General, to call your attention to the distinction between disappointment and dissatisfaction. The one was a natural feeling, in view of the momentous consequences that would have resulted from

*A few troops whose terms of enlistment had expired, Smith's unmanageable militia, and Gordon's division which arrived the day after Lee crossed the Potomac.

a successful attack, but does not necessarily convey with it any censure. I could not view the use of the latter expression in any other light than as intending to convey an expression of opinion on the part of the President that I had failed to do what I might and should have done. * * * * * It was, I assure you, with such feelings that I applied to be relieved. It was not from any personal considerations, for I have tried in this whole war to forget all personal considerations, and have always maintained they should not for an instant influence any one's actions.

Of course, you will understand that I do not agree that the President was right, and I feel sure, when the true state of the case comes to be known, that however natural and great may be the feeling of disappointment, no blame will attach to any one.

Had I attacked Lee the day I proposed to do so, and in the ignorance that then existed of his position, I have every reason to believe the attack would have been unsuccessful, and would have resulted disastrously. This opinion is founded on the judgment of numerous distinguished officers after inspecting Lee's vacated works and position. Among these officers I could name Generals Sedgwick, Wright, Slocum, Hays, Sykes, and others.

The idea that Lee abandoned his lines early in the day that he withdrew I have positive intelligence is not correct, and that not a man was withdrawn till after dark. I mention these facts to remove the impression which newspaper correspondents have given to the public, that it was only necessary to advance to secure an easy victory. I had great responsibility thrown on me. On one side were the known and important fruits of victory, and on the other the equally important and terrible consequences of a defeat. I considered my position at Williamsport very different from that at Gettysburg. When I left Frederick it was with the firm determination to attack and fight Lee, without regard to time or place, as soon as I could come in contact with him; but after defeating him, and requiring him to abandon his schemes of invasion, I did not think myself justified in making a blind attack simply to prevent his escape, and running all the risks attending such a venture. Now, as I said before this, perhaps I erred in judgment, for I take this occasion to say to you, and through you to the President, that I have no pretensions to any superior capacity for the post he has assigned me to; that all I can do is to exert my utmost efforts and do the best I can; but that the moment those who have a right to judge my actions think, or feel satisfied, either that I am wanting or that another would do better, that moment I earnestly desire to be relieved, not on my own account, but on account of the country and the cause."

* * * * *

[V] GENERAL HALLECK TO GENERAL SHERMAN.

Washington, October 1, 1863.

MAJOR-GENERAL SHERMAN, *Vicksburg.*

MY DEAR GENERAL: I have received and read with interest yours of September 17th. I fully concur with you that this Rebellion must be put down by military force; is cannot be compromise and offers of peace, as proposed by Northern copperheads. The conquered territory must also be governed by military authority until the time arrives for reconstruction. I have always opposed the organization

of a civico-military government, under civilians. It merely embarrasses the military authorities without effecting any good. Nevertheless, if the people of any section will organize locally against the Confederacy and in favor of the Union it would give us great assistance. General Banks thinks that this can be done in Louisiana. Perhaps he is too sanguine.

In asking the views of yourself, General Grant, and others who have had full and personal experience with these people, I hoped to be able to give the President correct opinions whenever he should ask them. The advice of politicians generally on this question I regard as utterly worthless—mere Utopian theories.

Your letter in regard to General Buell hits the nail on the head. I have never had other than friendly feelings toward Buell, and saved him several time when the Government had determined on his removal. Instead of any gratitude for this, he and his friends have not ceased to abuse me and to claim for him credit he does not deserve. He never once suggested the operations on Forts Henry and Donelson and up the Tennessee River, but strenuously opposed the plan, and I could get no assistance from him till I appealed to the President.

The same with McClellan. I did everything in my power to prevent his removal after I arrived here. This he knew perfectly well. Instead of any gratitude for this, he and his friends then and ever since have done all in their power to injure me. I have made no reply to their misstatements and abuse, nor do I intend to so long as the war lasts or I am in command. If I do not survive the war, sufficient materials for a correct understanding of my acts are on record and will be found by the future historian who seeks the truth. We all have enough to occupy us in the present, without discussing the past or seeking for premature fame. Those who indulge most in personal discussions will find it worse for them in the end.

Duty, Duty, Duty is the only proper motto now for military officers.

I am sorry to say that many of the generals commanding armies exhibit a very bad spirit. They seek rather to embarrass the Government and make reputations for themselves than to put down the rebellion. General Grant and a few others are most honorable exceptions.

Your ranks cannot be filled by the present draft. It is almost a failure, as nearly everybody is exempt. It takes more soldiers to enforce it than we get by it. A more complicated, defective and impracticable law could scarcely have been framed. Moreover, the copperheads of the North have done everything in their power to render it inoperative.

Yours truly,

H. W. HALLECK.

[W] GENERAL HALLECK TO GENERAL GRANT.

HEADQUARTERS OF THE ARMY,
Washington, D. C., Feb'y 17, 1864.

MAJOR-GENERAL GRANT,
Nashville, Tenn.

GENERAL: Your letter of the 12th inst. is just received. I fully concur with you in regard to the present condition of affairs in East Tennessee. It certainly is very much to be regretted that the fatal

mistake of General Burnside has permitted Longstreet's army to winter in Tennessee. It is due to yourself that a full report of this matter should be placed on file so that the responsibility may rest where it properly belongs.

The condition of affairs in East Tennessee and the uncertainty of General Banks' operations in Texas and Louisiana have caused me to delay answering your former communication in regard to operations of the campaign. In one of these you suggest whether it might not be well not to attempt anything more against Richmond and to send a column of sixty thousand men into North Carolina.

In the first place I have never considered Richmond as the necessary objective point of the Army of the Potomac; that point is Lee's army. I have never supposed that Richmond would be taken till his army was defeated or driven away. It was one of Napoleon's maxims that an army covering a capital must be destroyed before attempting to capture or occupy that capital. And now how can we best defeat Lee's army; by attacking it between here and Richmond on our shortest line of supplies and in such a position that we can combine our whole force, or by a longer time and with a force diminished by the troops required to cover Washington and Maryland?

The movement through Carolina attended to by you and also one from Port Royal on Savannah and into Georgia have been several times suggested here and pretty fully discussed by military men. It is conceded by those suggesting these expeditions that neither of them can be safely undertaken with a less force than that estimated by you, viz.: sixty thousand effective men. Some require a still larger force.

If we admit the advantage of either of these plans, the question immediately arises, where can we get the requisite number of troops?

There is evidently, a general public misconception of the strength of our army in Virginia and about Washington. Perhaps it is good policy to encourage this public error. The entire effective force in the fortifications about Washington and employed in guarding the public buildings and stores, the aqueduct and railroads does not exceed eighteen thousand men. We have a few thousand more in the convalescent and distribution camps and in the cavalry and artillery depots, but these are mostly fragments of organizations temporarily here for equipment and distribution and could contribute very little to the defense of the place. This power is therefore less than one-half of what General McClellan and several boards of officers recommended as the permanent garrison. Considering the political importance of Washington and the immense amount of military stores here it would be exceedingly hazardous to reduce it still further.

The effective force of the Army of the Potomac is only about seventy thousand. General Meade retreated before Lee with a very much larger force and he does not now deem himself strong enough to attack Lee's present army.

Suppose we were to send thirty thousand men from that army to North Carolina, would not Lee be able to make another invasion of Maryland and Pennsylvania? But it may be said that by operating in North Carolina we would compel Lee to move his army there. I do not think so. Moreover, Washington and the Potomac River and all the forces which Lee can collect will be moved north and the popular sentiment will compel the Government to *bring back* the army in North Carolina to defend Washington and Philadelphia. I think

Lee would to-morrow exchange Richmond, Raleigh and Wilmington for the possession of either of the afore-mentioned cities.

But suppose it were practicable to send thirty thousand men from Meade's army to North Carolina, where should we get the other thirty thousand? We have there now barely enough to hold the points which it is necessary to occupy in order to prevent contraband trade. Very few of these would be available for the field. Maryland is almost stripped of troops, and the forces in West Virginia are barely sufficient to protect that part of the country from rebel raids. The only other resource is South Carolina.

Generals Foster and Gillmore were both of opinion at the commencement of operations against Charleston that neither that place nor Savannah would be taken by a land force of less than sixty thousand (60,000) men. Large land and naval forces have been employed there for nearly a year without any important results. I had no faith in the plan at first, and for months past have ineffectually urged that ten or fifteen thousand men from Gillmore's command be sent against Texas or Mobile. And now these troops are sent upon another expedition which, in my opinion, can produce no military result.

I always have been and am still opposed to all these isolated expeditions on the sea and Gulf coasts. It is true they greatly assist the navy in maintaining the blockade and preventing contraband trade; but I think the troops so employed would do more good if concentrated in some important line of military operations. We have given too much attention to cutting the toe-nails of our enemy instead of grasping the throat.

You will perceive from the fact stated above that there are serious if not insurmountable obstacles in the way of the proposed North Carolina expedition. Nevertheless, as it has much to recommend it, I shall submit it, with your remarks, to the consideration of the President and Secretary of War, as soon as troops enough return from furlough to attempt any important movement in this part of the theater of war.

Lee's army is by far the best in the rebel service, and I regard him as their ablest general. But little progress can be made here till that army is broken or defeated. There have been several good opportunities to do this, viz.: at Antietam, at Chancellerville and at Williamsport, in the retreat from Gettysburg. I am also of opinion that General Meade could have succeeded recently at Mine Run had he persevered in his attack.

The overthrow of Lee's army being the object of operations here, the question arises how can we best attain it? If we fight that army with our communication open to Washington so as to cover this place and Maryland, we can concentrate upon it nearly all of our forces on this frontier; but if we operate by North Carolina or the Peninsula, we must act with a divided army and on exterior lines, while Lee with a short interior line can concentrate his entire force upon either fragment.

And yet, if we had troops enough to secure our position here, and at the same time to operate with advantage on Raleigh or Richmond, I would not hesitate to do so, at least for a winter or spring campaign. But our numbers are not sufficient in my opinion to attempt this, at least for the present. Troops sent south of James River cannot be brought back in time to oppose Lee should he attempt a movement north, which I am satisfied would be his best policy.

Our main efforts in the next campaign should unquestionably be made against the armies of Lee and Johnson. But by what particular lines we shall operate cannot be particularly determined until the affairs of East Tennessee are settled and we can know more nearly what force can be given to the Army of the Potomac. In the meantime it will be well to compare views and opinions. The final decision of this question will probably depend under the President upon yourself.

It may be said that if General McClellan failed to take Richmond by the Peninsular route, so also have Generals Burnside, Hooker and Meade failed to accomplish that object by the shorter and more direct route. This is all very true, but no argument can be deduced from this bare fact in favor of either plan of operations. General McClellan had so large an army in the spring of 1862 that possibly he was justified in dividing his forces and adopting exterior lines of operations. If he had succeeded, his plan would have been universally praised. He failed, and so also have Burnside, Hooker and Meade on an interior route; but their armies were far inferior in number to that which McClellan had two years ago. These facts in themselves prove nothing in favor of either route, and to decide the principles in regard to interior and exterior lines, objective points, covering armies, divided forces, etc.—these fundamental principles require, in my opinion, that all our available forces in the East should be concentrated against Lee's army. We cannot take Richmond (at least with any military advantage) and we cannot operate advantageously on any point from the Atlantic Coast till we destroy or disperse that army. And the nearer to Washington we can fight it the better for us. We can there, or between here and Richmond, concentrate against him more men than anywhere else. If we cannot defeat him here with our combined force, we cannot hope to do so elsewhere with a divided army.

I write to you plainly and frankly, for between us there should be no reserve or concealment of opinions. As before remarked, I presume that, under the authority of the President, the final decision of these questions will be referred to you. Nevertheless, I think you are entitled to have, and that it is my duty to frankly give, my individual opinion on the subject. It will no doubt be received for what it may be intrinsically worth. I can ask or expect nothing more.

In regard to the operations of our Western armies, I fully concur in your views; but I think the condition of affairs in East Tennessee and west of the Mississippi River will require some modification in your plans, or at least will very much delay the operations of your proposed spring campaign. There, however, are delays and changes which neither of us could anticipate.

Very respectfully, your obedient servant,

H. W. HALLECK,
General-in-Chief.

[X] GENERAL GRANT TO GENERAL HALLECK.

HEADQUARTERS ARMIES OF THE UNITED STATES.

Near Spottsylvania Court House, May 11, 1864, 8:30 A.M.

MAJ.-GEN. H. W. HALLECK, *Chief of Staff:*

We have now ended the sixth day of very heavy fighting. The result to this time is much in our favor. But our losses have been heavy, as well as those of the enemy. We have lost to this time eleven

general officers, killed, wounded and missing, and probably 20,000 men. I think the loss of the enemy must be greater, we having taken over 4000 prisoners in battle, while he has taken but few except stragglers. I am now sending back to Belle Plain all my wagons for a fresh supply of provisions and ammunition, and propose to fight it out on this line if it takes all summer.

The arrival of reinforcements here will be very encouraging to the men, and I hope they will be sent as fast as possible, and in as great numbers. My object in having them sent to Belle Plain was to use them as an escort to our supply train. If it is more convenient to send them out by train to march from the railroad to Belle Plain or Fredericksburg send them so. I am satisfied the enemy are very shaky, and are only kept up to the mark by the greatest exertions on the part of their officers, and by keeping them intrenched in every position they take. Up to this time there is no indication of any portion of Lee's army being detached for the defense of Richmond.

U. S. GRANT,
Lieutenant-General.

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[Y] GENERAL HALLECK TO GENERAL SHERMAN.

(Private and confidential.) HEADQUARTERS OF THE ARMY,
Washington, D. C., December 30, 1864.

MAJ.-GEN. W. T. SHERMAN,
Savannah:

MY DEAR GENERAL: I take the liberty of calling your attention, in this private and friendly way, to a matter which may possibly hereafter be of more importance to you than either of us may now anticipate. While almost every one is praising your great march through Georgia and the capture of Savannah, there is a certain class, having now great influence with the President, and very probably anticipating still more on a change of Cabinet, who are decidedly disposed to make a point against you—I mean in regard to "Inevitable Sambo." They say that you have manifested an almost criminal dislike to the negro, and that you are not willing to carry out the wishes of the Government in regard to him, but repulse him with contempt. They say you might have brought with you to Savannah more than 50,000, thus stripping Georgia of that number of laborers and opening a road by which as many more could have escaped from their masters; but that instead of this you drove them from your ranks, prevented them from following you by cutting the bridges in your rear, and thus caused the massacre of large numbers by Wheeler's cavalry.

To those who know you as I do such accusations will pass as the idle winds, for we presume that you discouraged the negroes from following you simply because you had not the means of supporting them and feared they might seriously embarrass your march. But there are others, and among them some in high authority, who think, or pretend to think, otherwise, and they are decidedly disposed to make a point against you.

I do not write this to induce you to conciliate this class of men by doing anything which you do not think right and proper and for the interest of the Government and the country, but simply to call your attention to certain things which are viewed here somewhat differ-

ently than from your standpoint. I will explain as briefly as possible. Some here think that, in view of the scarcity of labor in the South, and the probability that a part, at least, of the able-bodied slaves will be called into the military service of the rebels, it is of the greatest importance to open outlets by which the slaves can escape into our lines, and, they say, that the route you have passed over should be made the route of escape and Savannah the great place of refuge. These I know are the views of some of the leading men in the administration, and they now express dissatisfaction that you did not carry them out in your great raid.

Now that you are in possession of Savannah, and there can be no further fears about supplies, would it not be possible for you to reopen these avenues of escape for the negroes without interfering with your military operations? Could not such escaped slaves find, at least, a partial supply of food in the rice-fields about Savannah, and occupation in the rice and cotton plantations on the coast?

I merely throw out these suggestions; I know that such a course would be approved by the Government, and I believe that a manifestation on your part of a desire to bring the slaves within our lines will do much to silence your opponents.

You will appreciate my motives in writing this private letter.

Yours truly,

H. W. HALLECK.

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[Z] GENERAL HALLECK TO GENERAL SHERMAN.

HEADQUARTERS OF THE ARMY,

Washington, December 18, 1864. (Via Hilton Head.)

MAJ.-GEN. W. T. SHERMAN,

Savannah:

MY DEAR GENERAL: Yours of the 13th, by Major Anderson, is just received. I congratulate you on your splendid success, and shall very soon expect to hear of the crowning work of your new campaign in the capture of Savannah. Your march will stand out prominently as the great one of this great war. When Savannah falls, then for another raid south through the center of the Confederacy. But I will not anticipate. General Grant is expected here this morning, and will probably write you his own views. I do not learn from your letter or from Major Anderson that you are in want of anything which we have not provided at Hilton Head. Thinking it possible that you might want more field-artillery, I had prepared several batteries, but the great difficulty of foraging horses on the coast will prevent our sending any unless you actually need them. The hay crop this year is short, and the Quartermaster's Department has great difficulty in procuring a supply for our animals. General Thomas has defeated Hood near Nashville, and it is hoped that he will completely crush his army. Breckinridge, at last accounts, was trying to form a junction near Murfreesborough; but as Thomas is between them Breckinridge must either retreat or be defeated. General Rosecrans made very bad work of it in Missouri, allowing Price with a small force to overrun the State and destroy millions of property. Orders have been issued for all officers and detachments having three months or more to serve to rejoin your army via Savannah; those having less than three months to serve will be retained by General Thomas.

Should you capture Charleston, I hope that by some accident the place may be destroyed, and if a little salt should be sown upon its site it may prevent the growth of future crops of nullification and secession.

Yours truly,

H. W. HALLECK,
Major-General and Chief of Staff.

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[Z 1]

HEADQUARTERS OF THE ARMY,
Washington, April 10, 1865.

MAJ.-GEN. W. T. SHERMAN:

MY DEAR GENERAL: Sergeant Rose brought me your letter and report yesterday. I have given him \$20 and a ticket to Iowa, via both South Bend and Chicago, so that he will be certain to find Mrs. S. I have read your report with the greatest pleasure. It will be immediately published in the "Gazette." We are now amidst the excitement of victory, speeches, &c., on the news of the surrender of Lee's army. I hope soon to hear of Johnston's to you, and of Mobile to Canby. They can have no possible hopes now, and it is utterly useless to waste any more blood. If Johnston will surrender as Lee has I presume you will give him the same terms. Beauregard, Bragg and Hardee deserve no consideration. I congratulate you on your great marches and able combinations. You speak in your note of advancing north to the Roanoke. I presume that the next day you heard of the fall of Richmond and changed your line upon Raleigh and Greensborough. Stoneman, on the 31st ultimo, was at Statesville, and by this time should have rescued our prisoners at Salisbury and have destroyed the railroad toward Greensborough. Should Johnston fall back on Danville he will be hopelessly hemmed in between you and Grant, and must surrender. It is believed that Wilson has taken Selma and is moving south to join Canby. We are fitting out Pope and Reynolds for operations west of the Mississippi. I hope in a very short time to be able to say and feel that the rebellion is virtually at an end.

H. W. HALLECK,
Major-General and Chief of Staff.

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[Z 2] GENERAL HALLECK TO SECRETARY STANTON.

Richmond, Va., April 24, 1865.

Hon. E. M. STANTON:

I propose that the following order be issued:

"By direction of the President of the United States it is ordered as follows: *First.* All restrictions in regard to domestic commerce and trade, except as to articles contraband of war with the State of Virginia as insurgent territory, are hereby revoked in respect to the ports and counties of that State which have duly submitted to the authority or are in the military possession of the United States. *Second.* All restrictions upon travel to and from the ports of Virginia hereinbefore mentioned are hereby suspended, so far as regards loyal citizens of the United States and those who have taken the prescribed oath under the amnesty proclamation of the President. *Third.* The

commanding general of the Military Division of the James is authorized to make such exceptions to the above articles as in his opinion circumstances may require.

"By order of the Secretary of War."

I think the above would give great satisfaction, and afford immediate relief to Richmond and the surrounding country. I have had interviews with several prominent gentlemen from the interior. They all say that the people are ready and anxious to return to the Union. They are very destitute of provisions, and unless they can be relieved many will resort to robbery. Most of them, however, can provide for themselves if trade is opened so that they can purchase provisions and seeds.

W. H. HALLUCK,
Major-General.

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[E.] GENERAL HALLUCK TO GENERAL GRANT.

Richmond, Va., May 3, 1863. 4 P. M.

LIEUT.-GEN. U. S. GRANT:

I ordered the arrest of Smith when I first arrived. Think he has gone to South Carolina. Have ordered General Schofield to endeavor to catch him. Have also ordered the arrest of Letcher. Hunter is said to be quietly at his home advising all who visit him to support the Union cause. His hostility to Davis did much to make him (Davis) unpopular in Virginia. Considering these and the fact that President Lincoln advised against disturbing Mr. Hunter at this time, I would prefer to not arrest him unless specially ordered to do so. All classes are offering to take the amnesty oath, and those excluded from its benefit are nevertheless taking it and making petitions for pardon. It would be unfortunate to check by unnecessary arrests this general desire for amnesty. Many of Lee's officers have come forward to take the oath, and it is reported that even Lee himself is considering the propriety of doing so and of petitioning President Johnson for pardon. Should he do this the whole population with few exceptions will follow his example.

H. W. HALLUCK,
Major-General.





THE EVOLUTION OF THE HORSE.

(The Scientific American.)

AT the American Museum of Natural History, Prof. Henry Fairfield Osborn recently gave six lectures under the auspices of the trustees of Columbia University, entitled "The Jesup Lectures on the Evolution of the Horse." The lectures were illustrated, and covered first the the recent and past researches of Prof. Osborn and his assistants (especially Mr. J. W. Gidley) and of other investigators on the fossil horses of America and Europe; second, the mass of writings by American and European zoologists upon the origin and evolution, relationships, structure and habits of the breeds of domesticated and wild horse, and of their near relatives, the asses and zebras. The following is an abstract of the lectures covering the first series of topics mentioned: The various races of the horse family furnish a beautiful example of adaptation, or the adjustment of the organism to its surroundings. In every animal of to-day the remnants of adaptations belonging to the remote past are mingled with adaptations to the present, and many characteristics of the domestic horse may be regarded as inherited adaptations of remote antiquity. Thus the habit of carrying the head high is a reminder of the time when the wild stallion at the head of the herd had to be always on the watch for foes; the sudden shying is an instinctive memory of the days when a quick jump to one side might save a horse from the sudden spring of a beast of prey; while bucking is a device for shaking an enemy off the back. Again, the usefulness of the horse for cavalry exercises depends upon his having inherited an instinct for acting in concert with his fellows.

The several parts and habits of a horse are also adjusted to each other, and these natural adjustments were what first made the horse valuable to man. Thus the horse is a quadruped, seeking safety and food by its speed and traveling power; it is also a "soliped," with stilt-like legs, walking on the tips of its single toes; and being a grazer and browser, its neck must be long enough to bring the lips to the

ground. As a traveler it has acquired varied limb action and gaits, and also varied experiences, which have served to increase its resourcefulness and intelligence. Not being defended by horns or tusks, it uses its hoofs collectively as a weapon, which is particularly powerful and effective, the young being frequently defended from wolves by a ring of desperate hoofs. Since the chief enemies of the horse are the larger carnivores, it has developed quickness of sense and movement, and the young must be able to run with the herd at birth.

It is true that the horse is a complex "machine"; but it is more. No mere machine is self-perpetuating, no machine becomes perfected through long-continued use.

One of our photographs represents a beautifully mounted group consisting of a skeleton of a horse rearing and of a man, recently placed on exhibition in the American Museum. The picture shows that the bones of man and horse are strictly comparable, but man has retained more of the primitive or generalized features common to all mammals, the horse being far more specialized in the structure of its limbs and of its grinding teeth. The special structure and motions of the limbs are elucidated by the accompanying photographs of rearing and leaping horses. Figures were used by Prof. Osborn showing sections of the limbs, the various types of joints, the action of the muscles and tendons, of the ligaments and of the patella or knee-cap. The several parts of the limb in their capacity of levers must also be considered. The rate of oscillation of the upper arm and thigh bones when acting like a pendulum has been increased by the shortening of these bones, and they have become drawn up among the muscles. For purposes of locomotion, the movements of the horse's limbs are principally fore and aft, the muscles for drawing the limbs across the body and for rotating the arms having been lost during the course of increasing specialization. The photographic and mechanical analyses of the motions of animals made by Muybridge, many of which have been published in early numbers of the *Scientific American*, show the varied gaits of the horse in comparison with those of the raccoon, tiger, elephant, camel; and the mechanical superiority of the trot over other gaits must be admitted. The traditional representations by artists of the trot and gallop are usually wrong. A draft horse in the act of pushing against the collar of the harness, and thus of drawing a heavy load, causes the back-bone to curve somewhat at each thrust of either of the hind limbs, so as to bring the point of application of the force as near as possible to the midline of the body.

Most of the physical and mental traits of the horse are entirely useful. Usually each habit, each structure, must, as it were, pay its way, to give a definite return for the blood and food it receives from the organism as a whole. However, in human society there are individuals and institutions that have outgrown their usefulness, and although reduced in importance and destined to disappear ultimately, they still manage to "hang on." So too the horse retains traces of many former habits (e. g., a trace of the habit of brushing away the snow with its fore foot, so as to get at the grass underneath), and especially many vestiges in the skeleton. Among these may be mentioned the vestigial bony elements in the pelvis and shoulder girdle, in the wrist and ankle joints, and the famous "splint" bones back of the cannon bone, which are the vestiges of inner and outer toes. Sometimes organs which have entirely disappeared from the normal individual occur sporadically as "reversions." Thus the splints mentioned above very rarely appear as well-developed side toes, the foot

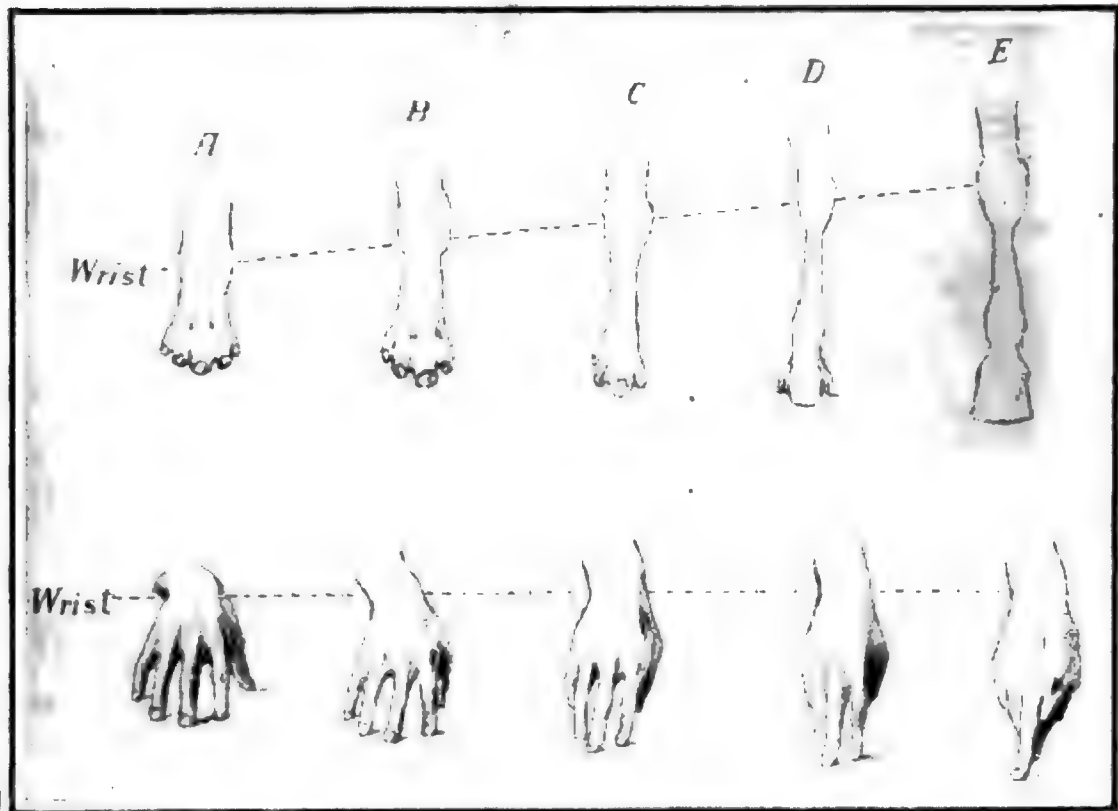


SKELETON OF A MAN AND A HORSE.

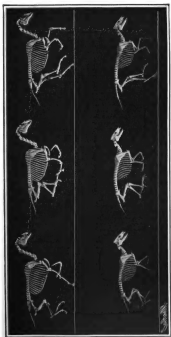
Mounted for comparison. Man has retained most of the primitive features common to all mammals, the horse being far more specialized in the structure of its limbs and of its grinding teeth.

of such a "freak" horse closely resembling that of one of the ancestral three-toed horses of the Tertiary period.

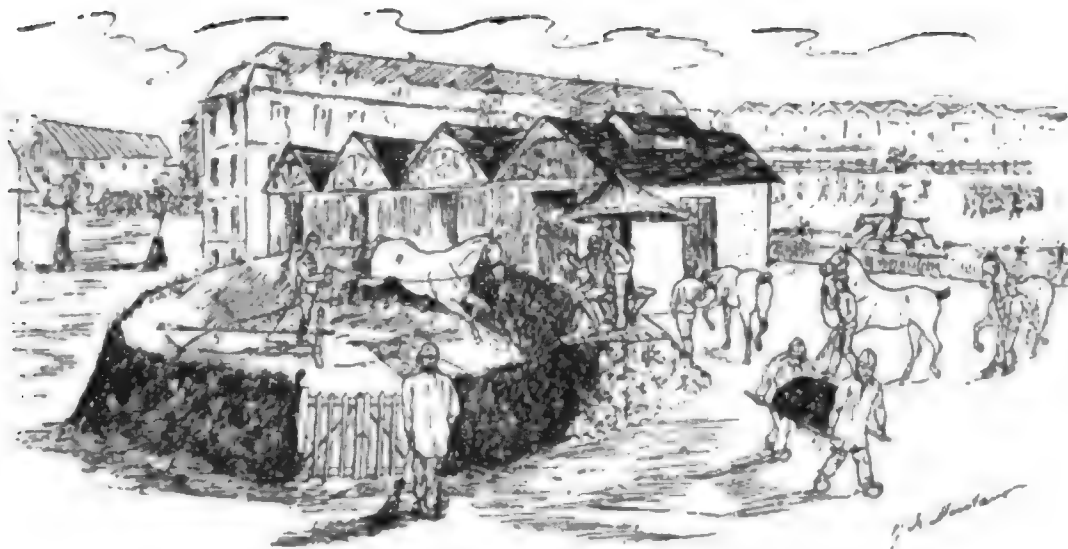
Many of the fossil skeletons now regarded as representing ancient equines were not recognized as such by their discoverers, on account of their very obvious differences from modern horses. For example, the great French naturalist Cuvier (1783-1844) who described the three-toed *Archæotherium*, recognized its horselike characters, but as he did not believe in the evolution or change of species, he naturally did not regard it as an ancestral equine. Other French naturalists described a number of other species with similar results. In England the great comparative anatomist, Sir Richard Owen, had the good fortune in 1839, 1842, 1857, to discover in rocks of Eocene age the fossil remains of what is now regarded as one of the most ancient and



primitive horses known (the term horse being used here in a very broad sense), namely, the little four-toed *Hyracotherium*. Darwin's great work on the "Origin of Species" (1859) set naturalists searching for "missing links" and ancestral forms, and so the French naturalist Gaudry, in 1865, fully recognized the equine affinity of the three-toed fossil genus *Hipparion* of Greece and the ancestral character of the horses of the Upper Eocene period. Finally, Huxley predicted in 1870 that the horse and all other hoofed mammals would be traced back ultimately to a form with five toes on each foot, and both Kowalevsky and our compatriot Cope prophesied that this generalized form would have bunodont, or low-crowned, grinding teeth. Finally, the discoveries of Leidy, Cope, and Marsh (of Yale) in this country first made clear in a general way the successive steps of equine evolution, and furnished Darwin and Huxley with a celebrated instance of evolution as indicated by fossil history.



Evolutional changes involve either, (1) the remodeling of old parts, as in the evolution of the grinding teeth; (2) the reduction of certain parts and enlargement of others, as in the loss of inner and outer toes and the great enlargement of the middle toe; (3) the coalescence or fusion of parts, as in the case of certain wrist bones and the fusion of the two forearm bones (ulna and radius); (4) the addition of new parts, as for example the great increase in the total number of cusps in the premolar grinding teeth. Thus "evolution" does not imply a uniform advance of all organs. If some develop, other degenerate. In the feet, the outer and inner toes (like Peter) were "robbed to pay Paul" (the main middle toe). Sometimes we seem to have evidence that evolution has taken place in a definite or determinate direction, as if, for example, the final complex pattern of the horse's grinding teeth were the goal toward which the trend of evolution had been aimed from the first. In fact, as shown by a series of photographs, all the elements of the complex later teeth are present, as it were, "in embryo," in the crown of the molars of the ancestral *Protorohippus*, the grinding teeth being low-crowned and their crowns with low tubercles, instead of the elaborately folded crests of later types. Hence, all the earliest hoofed animals retain this condition more or less fully, and among early horses the famous *Protorohippus*, the virtual founder of the horse dynasty, makes the nearest approach to it. A number of illustrations published some time ago in these columns represent the skeleton, the foot structure, teeth, and probable appearance in the flesh of this fascinating little creature, which was actually smaller than the head of one of its modern representatives. The *Protorohippus* had already lost by reduction the inner or first, and the outer or fifth toe in the hind foot, and most of the inner or first toe in the fore foot. This process of reduction was demonstrated to have gone on until in the final stage of evolution but one great toe, the middle of each foot, remained. The reason for this change is quite apparent. The horse family has made speed the keynote of its evolution; it had elected, as it were, to run instead of to hide, to seek for food over a wide area. One factor of speed is length of limb; wherefore the "horse" rose up on its toes, and the toes began to elongate. The first effect of this was to lift the shorter toes, Nos. I and V, clear of the ground, and being no longer useful in supporting weight, they speedily dwindled and vanished. Meanwhile the middle digit had to bear more and more weight, and hence it grew larger. The process of getting up on tip-toes being continued, Nos. II and IV followed Nos. IV and V, until finally only No. III, the middle toe, remained, with vestiges of I and V.



LONGEING AND TRAINING AT OBSTACLES.*

BY COUNT RAOUL DE GONTAUT-BIRON, FORMER RIDING MASTER AT
SAUMUR.

Translated for the Second Division, General Staff, United States Army.

By Captain CECIL STEWART, Fourth U. S. Cavalry.

CHAPTER VII.

OUTLINE OF A METHOD COMBINING THE ADVANTAGES AND AVOIDING THE INCONVENIENCES OF THE PRECEDING METHODS.

From all that goes before the necessity is evident of having a method, combining the advantages and avoiding as far as possible the disadvantages of the preceding methods

Training on the longe, without being necessarily carried on within the restricted limits of an open riding-school or of a riding hall, and the horse being riderless—such is the method to which we have been brought in order to make a high jumper in a very short time. The only trouble we have found with it is that horses, while quite able to jump safely at a pace much more rapid than by employing the other methods, reach with difficulty the speed which the chute allows. (This is why we consider this last means, the chute, as a very advantageous complement of training, especially for the racer.) Then this method requires application by a man acquainted with the use of the longe, if it is desired, within a relatively short space of time, to arrive at results such as could not be obtained by employing the preceding methods.

At the very start we banish constraint, and consequently condemn training done only with the horse with rider.

We shall show our reasons: the end we purpose is to train a horse at obstacles in the least possible time. On the other hand a horse is accounted trained when he is *willing* and *skilful*, and *jumps without tiring himself*; the first of these qualities is not obtained unless the other two conditions are fulfilled.

Freedom in play of head and neck during the different phases of jumping is an essential condition for obtaining skill and preventing fatigue.

*Continued from July number of the JOURNAL.

As to skill, it allows the horse when taking off, not only to examine unembarrassed the ground over which he must jump, as well as the nature of the obstacle, but also to calculate without restraint the spot where he should spring. It is also necessary when the animal is about to land; for head and neck constitute a genuine balancing pole, indispensable to him in order to avoid mistakes and to retain what is called his "balance."

It is understood, therefore, how much, at this moment, all useless pull on the reins becomes prejudicial; first it gives this balancing pole a false position (whence, falls, blows, sprains, etc.), and next it prevents the horse seeing and avoiding inequalities of the ground on which he is going to land, which leads to the same troubles.

Concerning the ways and means of preventing fatigue, we have sufficiently enlarged upon the rôle of head and neck, not to need to return to it.

We can, then, to sum up, conclude, that to train a horse at obstacles, to make him willing, is to teach him to make use of his head and neck.*

Now, starting with this principle, that a horse enjoying excellent conformation for obstacles, perfectly trained and ridden by a skilful horseman, and for the stronger reason that a defective horse, not trained, and ridden by an ordinary horseman, will never succeed in using his head and neck with the same ease as if at large, we are forced to conclude that it is by training on the longe, the horse riderless, that we must begin.

It is by this training that there will be inculcated in the horse the habit of using properly his head and neck in jumping. And after the instructor shall have dwelt upon this exercise, more or less, according to need, the animal will so feel the necessity of their employment, that if when ridden he experiences hindrance from the rider's hands, often quite involuntary, he will seek instinctively to get the mastery, in order to regain free play of head and neck.†

This fact admitted, that the horse must be trained while granting him the greatest freedom possible, we have chosen training on the longe, the horse being without a rider. But we shall not on that account confine ourselves to the limits of an outdoor enclosure or a riding hall; therein is one of the great advantages of our method, which is thus within reach of those who have no chute or circular enclosure at their disposition, and moreover facilitates training in the open over natural obstacles; for, during the course of training, the horse never being guided by the barriers of the chute or the slope that surrounds the circular track, gets so accustomed to obedience on the longe over artificial obstacles, that afterward the instructor bringing him up to an obstacle in the open, he jumps without any hesitation. Furthermore, our method, as we shall see further on, permits of making jumps on the longe over great heights as well as considerable distances (five meters for example), a result impossible to obtain in the restricted limits of a circular enclosure.

Finally, the longe is the only means that makes it easy for the

*One of our instructors and friends, a very competent horseman, Major de Sesmaisons, generalizing the matter, and inspired with the ideas of Major Dutilh, whose disciple he is, like myself, says with much judgment, "That to ride a horse well is to know how to make the most of his neck."

†Horses with tender mouths, or that have been ridden by a rider with bad hands, and especially those that have been made jump with a rider before being otherwise trained, make up their minds with difficulty to use their head and neck in jumping. With these horses, one must persist with patience until they regain confidence and begin to extend the head and neck.

instructor to obtain from the riderless horse, not only the gait that he judges suitable, but also the degree of speed in the gait.

Before beginning the analytical study of our method, we believe we ought to warn the reader against two capital faults that he will often meet with, not to say always, in the horse during training, and that it is important to anticipate and immediately combat, when they show themselves.

First.—The horse shows a pause before jumping.

Second.—The horse does not jump squarely.

First.—*The Horse Shows a Pause Before Jumping*—The horse committing this error thereby loses a part of his dash and deprives himself of one of his principal means of executing the jump. For lack of enough dash, he must make a muscular effort considerably greater, and give greater scope to the movements of head and neck.

Now, the greater the muscular effort the more the jump tires the horse. The more pronounced the movement of the head and neck, the more ticklish for the rider is the execution of the jump.

However, if it is a question of a high jump, the horse that has the fault of showing a pause will jump under very unfavorable conditions, but will nevertheless be able to accomplish his task; he will not be able, on the contrary, if it is a question of a long jump. In fact, we have determined that a horse, jumping one meter in height, easily covered four meters in width, and that the same horse, when he showed a pause before a ditch, with difficulty succeeded in safely jumping 2 meters to 2 m. 50 in width. This result proves that the void of the wide obstacle produces on the untrained horse apprehension that naturally makes him show a pause. Therefore, if to this pause, produced by apprehension which the void of the obstacle causes, is yet added that which the animal would have gained the habit of showing before high obstacles (a habit that would be retained before obstacles of another kind), the horse would no longer be able to jump as far in width as was cleared in the high jump of one meter.

The horse easily succeeding in jumping one meter high, one would be tempted to believe that it is easy for him to clear four meters in width, since he does it when he jumps one meter high. Experiment has proved to us the contrary. The horse does not jump safely four meters in width until after more or less prolonged exercise. It is true that the real meter must not be confounded with the imaginary meter of some huntsmen, who pretend to jump very often solid 1 m. 20-fences or five-meter ditches. After discussion we have sometimes gone and measured these fences and ditches; we have most often established for the one 0 m. 60 and 0 m. 70 and for the other two meters to 2 m. 50; which is already respectable, if these objects are frequent.

It is important at the outset of training energetically to combat pausing in jumping, and in order to do this gaits must be varied during training, employing gallop, trot and walk together. It will even be preferable to begin with the gallop, not making the animal jump at the walk (the gait at which pausing is most easily produced) unless he jump straight and show no pausing at the other gaits.

There would be temptation to insist, especially in beginning, upon the walk for gait, being that at which the horse learns best to use his head and neck (the principal aim of our work). But if one will observe that by jumping at the walk the horse always springs near the obstacle, one will see the trouble arising from this habit, which he will keep at all gaits and which perforce would bring on a pausing

all the more harmful as the gait was more rapid or the obstacle more serious.

It is of moment from the start of training to see that the horse takes off well at the place intended, that is for a high jump so much the farther as the obstacle is raised and the pace more rapid; for a long jump, as near as possible to the edge of the obstacle for the horse that must leap a three-meter ditch for example, if he spring two meters in front of this ditch, has evidently to make a jump five meters wide.

The habit the animal would have of making his take-off too near the obstacle for the high jump, besides the drawback of causing him to pause or to interrupt his gait, would have that of being very hard to destroy. That of making his take-off too far away, easier to eradicate, has the great drawback of obliging the horse to employ much more muscular strength in order to jump than if he sprang at the place intended.

It is seen then that the horse that jumps well must calculate his strides, so as to be neither too near nor too far from the obstacle, at the moment he springs; and this, without having to cut abruptly short his last stride, which would break up his gait and lead him to jump too near.

This calculation which the horse has to make will be easy at the trot, a gait at which the strides are not very great and may easily be shortened. But at the gallop, where the strides are long, it is necessary that the animal judge *from afar* the distance that separates him from the obstacle, in order to be able to regulate his strides so as to make his take-off at the intended spot.

It is understood then how necessary it is that, several strides before jumping, the horse arrives straight at the obstacle and be able freely to use his head and neck; how much also he must be exercised, in order to succeed in estimating with correctness the place where he must spring.

Second.—*The Horse Does not Jump Squarely.*—In order that the habit be not acquired at the walk it is necessary to combat the tendency the horse would have not to jump straight, when he is made to clear obstacles on the longe.

Many horses jump squarely, although they have been exercised at obstacles by means of longeing, because this work has been little insisted upon. But we, for whom willingness in the horse is but part of the end to be attained, have need of greatly prolonging longeing, and we would often meet with this fault if we were not careful.

Now this habit is very bad; the horse that has contracted it hinders horses jumping alongside him, and may occasion accidents.

Moreover, over a double obstacle, the horse that has not jumped the first obstacle squarely, naturally finds himself outside of the second, when the width of the obstacles is small, without having had the least intention of avoiding.

Finally, the horse, that during a long period of longeing has acquired the habit of not jumping squarely, most frequently commits this fault when showing a pause.

In fact he commences by coming straight at the obstacle, but too near; and it is when he has come too near that he places himself aslant for the jump, which movement he could not make without pausing, above all if his gait is fast or the obstacle serious. The pause is one more serious difficulty to add to the foregoing.

At first thought, one would be tempted to believe that the horse

in jumping on the longe on the ring to the left, for example, is prompted to jump crookedly by obliquing to the left. That is what would happen if he had not the following reason to do the opposite. The horse jumping at the end of a longe is prompted, in jumping, to throw his shoulders outward from the ring, because he shuns the whip which the instructor is often obliged to use to avoid the pausing (especially over the wide obstacle) and which he does not always succeed in concealing from the animal.

If this fault is not combated from the start in training the horse will always keep the habit of not jumping squarely, even when ridden and brought straight up to the obstacle, be the obstacle low or high, the gait slow or increased.

This much said, before setting forth our method, we still owe the reader a few observations.

Training over obstacles will be all the better understood the more the horse is tractable on the longe.

It will be advantageous to begin training with the wide jump, and that for two reasons:

First, the wide obstacle is that which is most often met with in our country.

Next, this obstacle produces on the horse an impression that induces him, when he is not trained, to show pausing. And we have seen that if this fault leads in high jumping to a defective and difficult jump, but one nevertheless possible, on the contrary, when it comes to wide jumping, the same fault prevents the horse entirely from jumping, and paralyzes him to the point of not being able, in spite of considerable muscular effort, to clear more than two meters to 2 m.50 in width.

Now if one will but consider that in the high jump, unless it be executed at a full gallop, even the trained horse shows a pause, very slight it is true, but sure nevertheless, it will be understood, if the high obstacle is dwelt upon at the start of training that there is risk of giving the horse the habit of pausing; it will afterward be hard to cause this habit to be given up when the question is the wide jump, which will become through this even impossible of execution.

It is therefore better to begin by habituating the animal to jump an obstacle at which the instructor should always seek to have the last strides hastened and *especially the last*.

However, to begin training, a bar will be used, placed first on the ground, then raised a trifle; this not so much to cause the horse to jump as to become absolutely his master, while making him go perfectly straight and quietly, as when longed without obstacles.

The bar on the ground, or nearly on the ground, does not present the drawback of a higher object, over which the instructor might have some trouble in preventing the horse from avoiding, stopping or showing a pause. It replaces to advantage, as far as concerns imparting docility, a ditch of very slight width, so placed as not to hinder the instructor's movements and which is not always at hand.

Because of the slight trouble the animal will have in passing over the bar on the ground, the instructor will quickly succeed in obtaining complete submission. *He should, moreover, attach great importance to this lesson, and not lose from sight that the animal that is obedient in it can be considered as almost broken.*

Indeed, if the instructor is careful to go from the simple to the complicated, that is to say to increase the obstacle by an amount

scarcely noticeable, he will be obeyed, without encountering the least resistance, each time that, satisfied with the horse's work, he should wish to ask for a more considerable effort. We also lay down for the instructor never to end the first lessons without coming back to the bar on the ground. He should even revert to it during the course of the session, if the animal, consequent to too great requirements, or for any other cause, happened to show dislike in his work.

In the beginning, it will often happen that the horse touches the bar and will become excited and try to knock it over.

There is no need to be alarmed; the frequent light blows that the animal gives himself will quickly teach him, often from the very day, sometimes only the day after, not to strike the obstacle hard enough to knock it over, if movable, or to fall himself, if the obstacle is fixed. The inflammation of the knees that might result from these blows will generally disappear of itself after some days, and in any case will not withstand a few douches or a little rubbing. This inflammation must not be confounded with that often seen in the knees of race-horses, that receive violent blows at fast gaits, and that occasionally preserve the marks of them during their lifetime.

We shall add to all these remarks that the business of subinstructor, simple enough in longeing, becomes more delicate in training at obstacles. This assistant should be intelligent enough to understand, quickly and well, orders that he will receive from the instructor.

OUTLINE OF THE METHOD OF TRAINING AT OBSTACLES.

HOW TO GIVE THE LESSON.

The bar being on the ground, by way of exception the work will begin at the walk and the subinstructor will hold the longe. He will let the horse have two or three meters play, and will walk boldly, moving straight at the bar, over which he will pass, followed by the animal.



Figure 30.

O, obstacle I, instructeur. A, aide

The instructor on his part, will follow the horse and will so act *that he does not in the least slacken his pace*, at the moment of crossing the bar; for this he will urge him with the long whip, if

necessary.

The bar passed, the walk will be continued for some paces straight ahead, an about will be made without halting, and the bar will be passed in the contrary direction and under the same conditions. Instructor and assistant will then resume the place assigned them in longeing and without to any great extent worrying about the pace aken by the animal, they will put him on a circle with a relatively small radius. and laid out so that the bar comes on the circumference.

The circle will next be enlarged when satisfied that the horse has no desire to avoid, and the instructor will make him exercise on it at the gallop, then the trot and walk.



Figure 31.

In this exercise and especially during the whole course of training, in measure as the difficulties increase, the instructor will be careful to place himself on the side where the horse comes up to jump and all the more behind the obstacle as the latter is higher or wider and as the horse has more tendency to show a pause. The instructor lets the end of the longe not in use drag on the ground or has it held by the assistant. The latter, always at the instructor's orders, takes his stand either between him and the obstacle, and the nearer to the obstacle the more that the horse tends to avoid or to jump askew within the circle (*Fig. 30*), or at the other end of the obstacle with reference to the instructor, if the horse tends to jump askew outside the circle (*Fig. 31*), or quite in rear of the obstacle to urge the horse before making the jump (*Fig. 32*).

The instructor's place should be such, that, if the horse described an exact circle about him, this circle, or more correctly this circumference, should either pass between him and the obstacle (*Fig. 33*), or be tangent to the obstacle (*Fig. 34*), or finally cut it so that the greater part of the circumference be always on the side from which

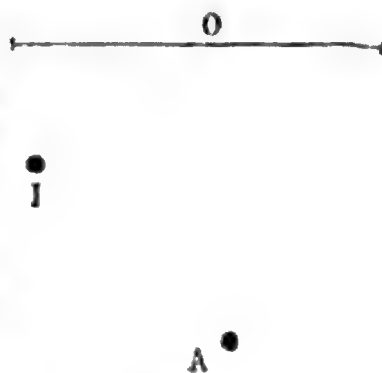


Figure 32

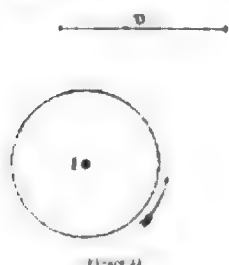


Figure 33

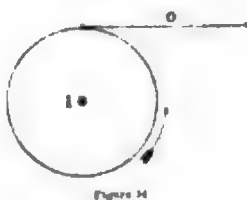


Figure 34

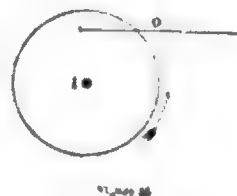


Figure 35

the obstacle must be approached (*Fig. 35*.) In fact, the horse, after having been put at this exercise for some moments, no longer describes an exact arc about the instructor; for, already accustomed to cross the bar, he tends to take the original direction to go up to it, from the moment it is noticed; moreover, the whip, which the instructor is often obliged to use, and which, in spite of all his efforts, he does not succeed in hiding from the horse, frightens the latter, makes him bear away, and in this very way places him at right angles to the obstacle. If the instructor made use of the whip, taking his stand on the prolongation of the obstacle, he would act upon the horse only at the very instant of jumping, instead of being able to urge him from behind several steps before the obstacle; further, how try to hide the whip from the animal, that from this time on would be frightened and would perforce jump askew outside the circle (*Fig. 36*)?

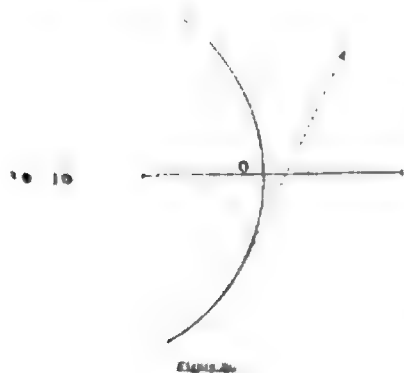


Figure 36

To sum up, the instructor, when causing a quite small obstacle to be jumped, a bar on the ground for example, should take his stand on the side on which the horse comes up to jump the obstacle, in such way that, if the horse describe an exact circle around the instructor, this circle may cut the bar, the greater part

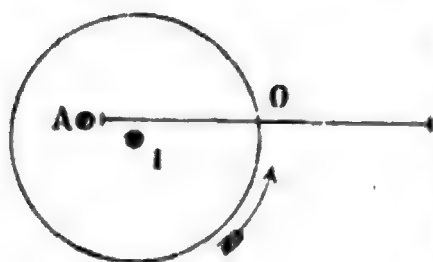


Figure 37.

being on this side and the lesser part on the far side (*Fig. 37*).

On the contrary, when it concerns a very high or wide obstacle, a five-meter water jump for instance, requiring a rapid gait, the instructor should place himself on the side of the horse's approach for the jump and quite far in rear of the obstacle, so that if he made the animal trace an exact circle about him and hav-

ing the ordinary radius in this exercise, this circle would be far from the obstacle (often even very far) (*Fig. 38*).

In this case, the point where the horse quits his regular circle to direct himself perpendicularly to the obstacle, may easily be distant twenty meters from the obstacle. Of course the horse does not from the very start succeed in getting the habit of moving straight at a big obstacle and at so great a distance from the latter without trying to avoid; this obedience is easily obtained when it is first asked over a very small obstacle, whose importance is increased as the animal progresses. When it is a matter of a serious obstacle and the horse, describing his circle about the instructor, finds himself at the place where he quits this regular circle to go perpendicularly to the obstacle, the instructor may step forward one or two paces parallel to the obstacle and toward the horse; he in that way stands entirely behind the horse and in an excellent position to follow him and touch him up with the long whip. The latter cannot make him jump askew, since it acts right behind him.

As the horse should not be hindered in any way in his jump, it is necessary, especially for obstacles of great importance, that the instructor make use of a very light longe, free from knots which would prevent allowing it to run easily through the hand*.

So then, for the reasons we have just outlined, the horse does not trace an exact circle about the instructor and so gains the habit of moving straight at the obstacle from the time he perceives it.

If he appeared ordinarily to want to jump crookedly, the assistant should straighten him out again by standing on the side toward which the horse tends to jump askew, so as to drive him toward the opposite side, taking, if need be, a more or less threatening attitude. The instructor would experience great difficulty if, wishing himself to correct the horse that jumps askew away from the circle, he sought to bring him back toward the interior of the circle by a pull on the longe at the moment of jumping; by means of the assistant, the fault is very easily corrected.

*The instructor should, for that purpose, provide himself with heavy gloves to save his hands.

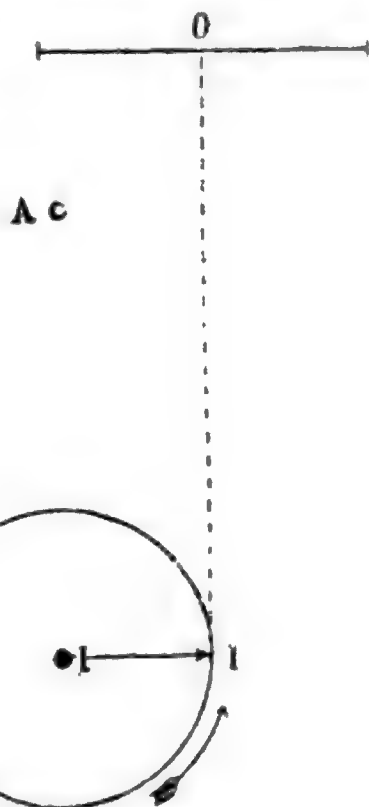


Figure 38.

Jumping obstacles on the longe should be done to both hands, so as to avoid having the horse gain the habit of jumping askew from one side only, to the right for instance, if he was exercised only to the left hand.

These remarks, or rather this long digression, made, and therefore the instructor well knowing how he should act in all cases that will present themselves, let us return to our training.

Exercising the horse over the bar on the ground will be continued until he no longer shows any fear. Moreover, it will be easy to take account of this if he is seen to pass the bar at gallop, trot and walk without pause, and if, at the walk, he walks before and after the obstacle with head nodding, as a horse would do walking carelessly at liberty; in a word, if the animal is seen to be just as manageable as if he were working on the longe without any obstacle.

If the animal persists in bolting over the bar or jumping it, which frequently happens, the instructor will decrease the circle, stop the horse immediately after his jump, make him change hands,* as laid down in longeing, start him forward again by a click of the tongue, make him recross the bar, stop him again, and thus continue, permitting the animal to walk as little as possible on each side of the obstacle and forbidding his showing any pause. Fear having completely disappeared, the instructor, instead of stopping the horse directly after the bar, lets him walk some steps, makes him change hands, recross the bar, walk a few steps more, and so on, increasing more or less the distance from the bar at the about, according as the horse is more or less quiet.

The exercise will be continued until the horse describes the complete circuit of the circle several times, without increasing his pace and particularly without decreasing it.

The animal will next be put at the same exercise while enlarging the radius of the circle, which in the course of training should be longer as the horse is more obedient, the pace more rapid and the obstacle more serious.

The bar will next be raised progressively up to about fifty centimeters, being careful not to fasten it, so as not to disgust the horse by a fall, which might cause an accident that the animal would always remember.

We prefer movable obstacles during the early training; for it is beneficial for the horse to gain confidence and not to hurt himself in jumping; afterward we use fixed obstacles, when the horse has been fully instructed in the way to go about jumping them; for if he fall, he can take account of the mistake he has committed.

In order to have a sufficiently mobile obstacle, without however being too much so, the position of the posts at the ends of the bar is reversed, so that, no matter on which side the horse comes up, there is always one end of the bar in front of one post and one end behind the other. In this way the bar will never be immovable, without however being too easily displaced (*Fig. 39*).

The horse will be drilled as much as possible in following consecutive gaits; the instructor

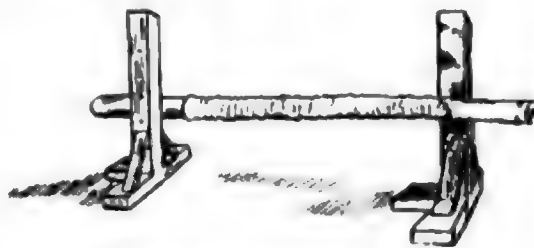


Figure 39.—Posts and bar.

*When the instructor makes a change of hands he is careful also to change the center of the circle described by the horse, so as to take his proper place with reference to the obstacle he wishes to have jumped.

should attach the greatest importance to the exercise at the gallop being perfectly executed* before passing to exercise at the trot and walk, in order not to let the horse get the habit of springing near the obstacle.

So then, if during the course of the lesson the horse should show some hesitation in jumping the bar at the gallop, there must be no hesitation in decreasing the height of the obstacle and even in returning to the bar on the ground. The animal must hasten the two or three strides just before the bar, but after having jumped, must retake the gait at which he was going.

When the horse is perfectly tractable over the bar at fifty centimeters, the cavesson is taken off and he is ridden by a trained trooper.† The latter will be careful to keep on the circle; he will pass over the bar on the ground following progressive gaits.‡ He should, of course, know enough to let the horse have free use of his head and neck.

When the animal passes the bar without jumping, the trooper will be directed to enlarge the circle so as to come straight up to the bar.

The trooper will be careful to change hands often, either near or far from the obstacle, and should demand from his mount the same calmness as if it were on the longe, calmness that the horse will readily acquire if he is not hindered in his movements by a too heavy hand or a too sensitive mouth.

When the trooper, riding a horse having a tendency to bolt over an obstacle, passes from a slow to a rapid gait, he should do so without suddenness and before changing hands; for, if this passage from one gait to another always came after the about, the horse might think that because he is in front of an obstacle he must change gait, and consequently might become too eager at obstacles. If, on the other hand, riding an eager horse, the trooper passes from a rapid to a slow pace, he ought to do so after changing hands, the horse of this temperament always having a tendency to rush at obstacles. It would not be necessary, however, under pretense of avoiding the too eager horse, to fall into the opposite error and reach an obstacle with a horse lacking spirits. The horse ought always to have some go without for that matter bolting. But it is preferable, with a view to a well-executed jump, to have to urge the horse a little rather than to be obliged to hold him in much; in the latter case the animal is hindered and cannot execute his jump in a safe way.

The trooper ought now to quit the circle and describe figures of all kinds; in executing them he will pass over the bar whenever he meets it. He will dwell on weaving in and out,¶ which has the advantage of rocking the animal, that is to say, of causing him to lean now to the right, now to the left, and to accustom him thus to get feel of the rider's hand, which is necessary for good execution of the jump. These varied figures, during the execution of which the horse does not jump the obstacle, the many times he passes alongside or finds himself going toward it, make the animal very quiet, since

*The lesson will be then all the more easy to give as the horse is more tractable on the longe.

†When the progression of our method has been followed, step by step, it is needless to make horses jump with a rider and held on the longe; we advise, however, this method of action with bad-tempered horses that have remained long obstinate at obstacles.

‡So long as the bar is slightly raised, it would be better to begin with the trot than with the gallop, the horse being more easily handled at this first gait. This precaution will render more easy the work on the circle and the perpetual changes of hands necessary to quiet the animal.

¶(Serpentines.)

he does not expect to jump each time he finds himself near the obstacle.

The preceding exercise will be repeated, the bar being progressively raised up to about fifty centimeters and requiring the horse not to increase his pace after the jump. If he increases it, he will be quieted by means of contracting the figures that he is made to describe, and following this by repeating the jump.

Nevertheless, as beforehand, no importance will be attached to the horse's hastening the two or three strides just before the bar, provided that after having jumped he retake the original gait.

In this exercise, the trooper who should fear to hinder his horse while jumping ought preferably to use the gallop; for it is known that the faster the gait, the less chance the rider has to hinder his horse. Moreover, if the hold of the reins that we have pointed out is made use of the trooper has no need to be much practiced in order not to hinder his horse in jumping and he will be able to permit himself more jumping at the walk, the gait at which the horse has most to learn.

After the preparatory exercise that precedes, the horse knows how to spring and is perfectly docile over obstacles. He may consequently be brought to the wide jump, for which great submissiveness on the animal's part is quite necessary, since the instructor, as we have said, is at times hindered a little in his movements.

He must have at his disposition a ditch one meter to 1m. 20 wide and so sloped as to avoid all chance of accidents, that would give rise to fear in the horse and not confidence which we seek to give him.

The exercise prescribed for the bar at fifty centimeters will be repeated with the longe, permitting the animal, as in that work, to hasten, if he wish, the strides preceding the obstacle, provided that he afterward retake the original gait at the instructor's indication. The latter should even insist quite particularly on having *the last stride, at the instant when the horse springs*, hurried. In fact, though the animal quicken a great number of strides before the obstacle, *he entirely loses, if he hold up on the last stride, the benefit resulting from his having hurried the preceding strides*: he is consequently unable to make a wide jump.

It is at this stage of training especially, that the instructor ought to prevent the animal from showing the least pause, even though it be to take account of the obstacle. For it is necessary to accustom the animal to judge rapidly, and without stopping in the least, the obstacle he must jump; this result can be completely obtained, since we only bring the horse up to obstacles that correspond with the experience which he has already acquired. This exercise should be gone through with using successively the three gaits and then all three together.

When the horse is well broken to it, he will be freed from the longe and ridden by the trooper, who will execute at trot and gallop the same work as for the bar raised to fifty centimeters and requiring the same calmness. The trooper should often, immediately after having cleared the obstacle, bring his horse to a walk, and drop the reins, so as to let the animal walk as if free. This practice will give a habit of calmness after an obstacle; the horse, having accelerated the last strides, might in fact take advantage of this acceleration to pull. The trooper will experience the good effects of this practice in the case where, feeling his horse hold up in the last strides before

jumping, he will have been obliged to spur him; indeed, thanks to this habit gained, he will be able to render himself master of the animal, as soon as the obstacle is passed.

Arrived at this point, the horse will be put again on the longe, and led into the open, where, put on the circle, he will easily jump and willingly cross natural obstacles. There need be no concern in making him negotiate more serious ones than those he has so far jumped; for he has always less apprehension about natural obstacles, and consequently clears them more easily and more skilfully.

In addition the difficulty of obstacles will be increased first in width, then in height when the horse makes the wide jump without showing the least pause.

The blind ditch is an obstacle at which the horse should very often be exercised. Care must be taken that the animal gets the habit of rapidly judging this obstacle, so as not to show any pause that would make it impossible to clear the necessary width. To this end the instructor first exercises the horse over a ditch slightly concealed and narrow.

It is especially at this kind of obstacle that one will reap the benefits of the horses' having gained the habit of carrying forward his head and neck before withdrawing them upon the trunk, without

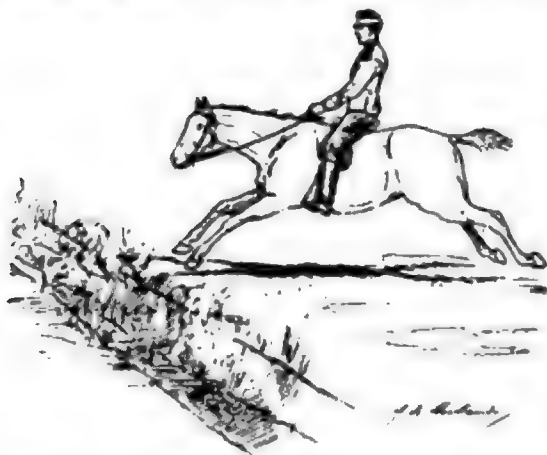


Figure 40.—Horse going over a blind ditch.

which action he might pass over other obstacles if absolutely necessary, but would be unable safely to clear blind ditches; through the fact of the head being lowered and carried forward at the same time that the neck is extended he can take perfect cognizance of the obstacle (*Fig. 40*).

The horse, knowing how to jump on the longe ordinary obstacles met with in the field, will be given the same lesson, no longer held on the longe but ridden at gallop, trot, indeed even

at a walk, if the trooper's skill and the nature of the obstacle permit; the instructor does not forget that the swifter the pace, the less the hand has a chance to hinder the animal.

In this instruction it will most often be useless to jump the same obstacle several times; the aim on the other hand is to vary impediments with which the horse will meet.

It is possible that the lesson at the blind ditch requires that the longe be insisted upon a little more before having the animal ridden; it is for the instructor to judge what he ought to do.

Having reached this point, the horse is considered trained for military service and may confidently be taken upon the drill grounds, to clear several times running, *while changing gaits or without quitting the gallop*, the obstacles that are generally arranged there.

He is also fit to jump safely the different obstacles met with in hunting, save however in regions, moreover very rare, that require the use of quite remarkable jumpers. Further we affirm that if the exercise has been well given, following scrupulously our procedure, three days, with two lessons of a half hour daily, will suffice to obtain this result. Our method has then for its end to make,

in a very short time, a *fully developed horse* fit to render service as a jumper, either as troop horse or hunter, and to prepare him perfectly for receiving the following lessons, which ought to make a high jumper out of him. But the application of this method requires deep study and is not within reach of the first come instructor.

When training a bunch of young horses, not only would it not be expedient, but also it would be prejudicial to push this instruction so rapidly, the horse not having gained his full strength. We believe, then, that in this case training at obstacles ought not to be the object of particular lessons, but on the contrary ought to be done at the same time as the training proper. We also believe that the young horse is the gainer by being made to follow it daily. This is the way we advise giving this lesson: after the horse without rider has been exercised, during several days, on the longe over obstacles placed for this object in a *circular riding enclosure*, he ought to be able to be ridden over other obstacles. The instructor then has a bar placed on the ground on the track followed and directs the troopers to dismount.

They, leading their horses by the head, take up the walk, one behind the other, the leader having a very willing horse and tracing a circle such that the bar comes on the circumference. The instructor is at the center of the circle and urges on the horses that hesitate. After some circuits the horses pass the bar without any fear. The instructor then has the horses mounted and continues the circling, first at the walk, then at the trot and gallop, having the circle enlarged according as the horses gain confidence and while charging the troopers to take more distance; he next has hands changed on the circle and the horses make several circuits at different gaits, then he orders them off, and from this time on the training proper continues as if the bar were no longer in the hall or enclosure, and this during a great part of the session. Each of the following days during a quarter of an hour, more or less, as the instructor judges proper, the bar may be raised ten centimeters and the training proper continued, as was done when there was no obstacle in the ring. A few days after, the obstacle may be again raised ten centimeters, and so on up to the regulation height, being careful to go quite slowly in increasing the height of the obstacle.

As to the ditch, it will be gone at in the same way, always keeping up the training work proper. The squad will be formed near by the ditch to be jumped and each trooper, when given the word, will move out, clear the ditch and then resume his place in the squad, being careful to come down to the walk after jumping, if the horse is too eager; the instructor again may order the troopers to jump the ditch whenever in the different movements ordered they find it across their track. As in the high jump, very little will be added to the importance of the obstacle, and preferably the narrowest ditch will be dwelt on. Note that, no matter what the obstacle, if the trooper is compelled to change the horse's gait in order to jump, he makes him retake the original gait immediately after jumping.

By this method, not only do horses develop their powers and learn to jump perfectly, but further they get the habit of invariably looking at the ground over which they are going and consequently become very skilful in varied ground. When the horses of the squad are judged willing and skilful, they may be taken, at the end

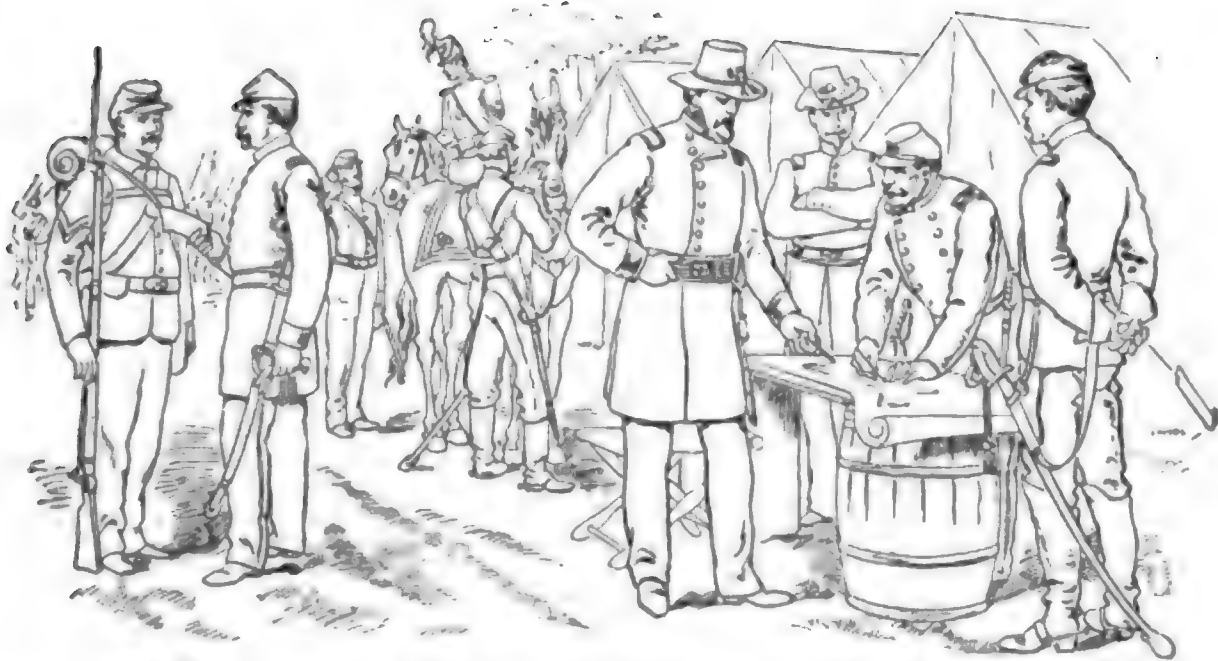
of the sessions, to the artificial obstacles of the drill ground, where they are drilled to jump either singly or by twos or by fours.

But the troopers should be warned that they are no longer required to keep the dress at some meters from the obstacle, the horse requiring complete initiative in order to jump. The alignment will be retaken when once the obstacle is passed.

It is then that it will be advantageous to have recourse to training behind the hounds, provided it be practiced with wise limitations and without ever tiring the animal. This allowance of work would give back to a horse the spirits and keenness that an inexperienced instructor's mistakes might have deprived him of during training on the longe, always a matter of delicacy.

[TO BE CONTINUED.]





Comment and Criticism.

"Military Hygiene."

Colonel R. W. Leonard, late Twelfth N. Y. Volunteers.

Captain Traub in his recent excellent and valuable article entitled "Military Hygiene" quite reasonably, considering the reports current, ascribes the sickness in the camps in 1898 to camp pollution, and quotes from the then Secretary of War: "What was the cause? The answer is simple and easy of demonstration. Generally described, the cause of the sickness was camp pollution; specifically, the cause was due to ignorance or neglect on the part of officers, coupled with the inexperience of the newly enlisted soldiers." And again, "The evidence is overwhelming that the sickness among the soldiers encamped in the United States during the summer of 1898 was the result of ignorance, inexperience and carelessness on the part of officers and men.

"The fact that typhoid fever was prevalent in every camp, whether of 1000 or 50,000 men, indicates what other indisputable evidence conclusively demonstrates."

Very respectfully the writer begs leave to say that these assertions are founded on assumption.

The writer is quite familiar with all the phases of the camp at Chickamauga, having been in that camp from May 17th till August 25th, when it was thought possible that there might be some local reason for the prevalent fever, and the troops were hurried from this plague-stricken spot to places believed to be healthy.

One of the misleading comments on Chickamauga is that in 1863 it was the camping ground for more than 100,000 men who were not sick. That these 100,000 men were the survivals of the fittest, in-

ured to fatigue and exposure, and that they were "hard as nails" and not susceptible to disease, is not considered when contrasting conditions in 1898 with those in 1863.

In 1863 the men drank from the Chickamauga Creek and from the Tennessee River with impunity—the creek was used for every purpose—no water was too bad to use.

There were very few at that time who knew that drinking water should be boiled, and these few were not in the army.

In 1898, the water for drinking and cooking was brought in barrels from the Blue Spring and the Crawfish Spring, several miles distant, for several weeks, until pipes were laid and water brought from another source—the men were not allowed to drink from the creek nor from the wells on the reservation.

The troops first to arrive at Chickamauga went into camp in the open, and presently went to Tampa to join the forces intended for Santiago. These were succeeded by 50,000 militia from the various States. These new troops were encamped in the woods, leaving the open for drill purposes. The woodland allotted for camps was rocky; the soil, where there was any, varied from three to eighteen inches in depth, making it difficult to find a spot where it was possible to dig sinks. When it rained, these sinks, in soil impervious to water, filled, and the overflow followed the law of gravity, possibly toward the kitchens, possibly in other directions. Everyone was saying, "Of course, we shall not be here very long, no one would think of putting a camp in the woods, and on such ground, if we were going to stay any time." That the medical direction of this large camp should be at the mercy of a veterinary surgeon, who had just been made a lieutenant-colonel in the Medical Department was a sin that cannot be charged to any line officer.

That the typhoid spread so quickly in this camp was doubtless due to the myriads of flies that suddenly appeared, infesting sinks and kitchens. It has been asserted that these flies came in consequence of the filthy camps. In August these flies disappeared as suddenly as they had appeared. If unsanitary conditions brought the flies, what, then, drove them away?

The camps were all industriously policed; officers bought lime for disinfecting until it could be determined which bureau should issue it.

An officer on duty at Alexander Bridge was impelled by curiosity to go into a house by the bridge to see how the natives lived—a wretched-looking people with putty-colored complexions. A convalescent child first attracted attention. In reply to the question "What is the matter with the child?" the mother said, "Typhoid fever, and the other one had it just before this one."

The woman added the information that it was a great place for typhoid fever, and that they had it every year.

To show that the fever at Chickamauga was not due to ignorance, carelessness or any other cause under the control of the line officers it is proper to follow some of these regiments and observe their medical history. One brigade, which was at Chickamauga, went to Matanzas later. One regiment in this brigade that had lost fourteen men from fever contracted in Chickamauga had no sick while at Matanzas excepting venereal cases and feet cut by broken glass while bathing. One regiment, stationed singly at Mount Chanin, Del., had no sick to signify. This case goes to disprove the assertion that typhoid was prevalent in every camp whether of 1000 or 50,000 men.

All this amounts simply to saying that salubrious localities are more healthy than those that are insalubrious.

The troops that were at Santiago were horribly fever stricken; the troops stationed at Havana, Matanzas and Cardenas, were in perfect health.

The regiments that were sick in Chickamauga were free from sickness in Matanzas and Cardenas.

Much of the public opinion concerning the ignorance of the troops at Chickamauga is the result of the denunciation of the late General Boynton.

General Boynton was the president of the Chickamauga Park Association. In fact, he was the father of the park and was proud of his ugly duckling. In his eyes that piece of sterile ground was beautiful.

He could not see that it was simply an historic spot, of interest only to those who wished to study the battle, and that it should have been left exactly as it was in September, 1863.

The student finds this interesting ground cut up by roads apparently laid out for railway purposes. Where once was a hill, there is now a cutting; where there was once a valley, is now an embankment, and hundreds of sign boards bear the legend "In 1863, this road was without cuts or fills."

The general took it as a personal grievance that people should be so inconsiderate as to fall sick in this Garden of Eden (?).

So much for 1898. Let us turn to the Philippines and enquire into the cause of the sickness there.

The assertion is made that had it not been for the haste in organizing the twenty-five volunteer regiments in 1899, and had the enlistments been restricted to those who could meet Tripler's requirements, there would have been very few discharges for disability, excepting for wounds. The only disease that is strictly peculiar to service in the Philippines is nostalgia.

There was one regiment organizing in 1899 for service in the Philippines that refused 450 recruits who had passed the recruiting officers and the civilian medical examiners.

One lieutenant had been promised a captaincy if he recruited a certain number of men. Out of sixty-three of his recruits, fifty-eight were rejected. A Washington paper had a column condemning the unpatriotic conduct of the commanding officer in refusing to accept "men who wished to fight for their country."

These rejected recruits were alcoholics, sufferers from various disorders, feeble intellects and one had curvature of the spine.

A surgeon was sent from Washington to re-examine one batch of 116. The rejection was confirmed.

Note the result: All of these 450 rejected recruits were accepted in other regiments, such was the haste to complete recruiting and get out to the Philippines.

One colonel of volunteers in the Philippines said that he was practically ordered to accept forty of those rejected. When asked what became of them, he replied: "All discharged for disability incidental to the service."

Every man discharged under such circumstances is entitled to a pension for the rest of his life. The pensions paid to men improperly enlisted, added to the cost of enlisting, clothing, subsisting and transporting them to and from the Philippines amounts to a considerable sum in the aggregate, much of which was needless expense.

"Notes on Promotion."

Major W. P. Evans, Military Secretary.

In support of the various suggestions which have been offered by the advocates of promotion by selection the claim is made that such a system is needed for the army for actual service in time of war, and yet these advocates of a new system have utterly failed to propose any scheme that would be practically operative in time of war. The primary test to which every proposed scheme should be put is, will it work in time of war? If it fails to stand this test, further discussion of it is worse than useless whatever evil it may be designed to correct. The army is organized for war. War is its *raison d'être*. Any system of promotion will do for a time of peace. Any kind of army will answer when it is not confronted by an enemy.

If we apply the test to the suggestions of General Allen, the system which he advocates must fail. In time of war the army will have more absorbing work than that of picking out eligibles for promotion. The "third colonel," the "fifth lieutenant colonel" and the "ninth major" will be needed for more serious duty than that of sitting on a promotion board. They will be needed to give practical illustrations of their own fitness to command men. The still larger general board which is suggested by the author as an alternative

will be still more impossible in time of war. It must be composed of officers of distinction if its opinions and recommendations are to have any weight. How shall we get such a board together when we are in the face of an enterprising enemy? Such officers will have a graver responsibility on their shoulders than that of balancing the military virtues and vices of those who seek personal advancement; and so this scheme fails because it will not stand the test, the only one which is a proper test of the measure of its value. The recommendations for promotion which would be made by any board which could be gotten together for such a purpose in time of war would not be worth the paper on which they might be written.

Already we have too many innovations which have not stood the test of war. Far be it from me to suggest, as an instance, that the general staff would not stand the test—that its array of talent would fall away in time of war, seeking the command of troops, but there are many scoffing unbelievers in the service who will not believe, until they see a successful test, that the organization will stand the stress of war. If, indeed, it should successfully stand the test and remain in existence as a general staff, as now constituted, the army would miss some very efficient material for the making of regimental and brigade commanders.

If any system of promotion by selection can be devised which could be successfully operated by army boards in time of war, let us hear of it. If none such can be devised, let us confine the question to the consideration of what will be the merits of the system when operated wholly by the civilian appointing power.

"The U. S. Magazine Rifle, Model 1903."

Lieutenant Morton C. Mumma, Second U. S. Cavalry.

Referring to the most excellent article on "The U. S. Magazine Rifle, Model 1903," by Major W. C. Brown, Third Cavalry, which appeared in the May number of the JOURNAL OF THE MILITARY SERVICE INSTITUTION, the following comments on the rifle itself, and on other questions brought out by this article, suggest themselves to me:

I first fired the new rifle when it was in an experimental state and was being exhibited by a member of the board, which recommended its adoption. The weather was cold and no bull's-eye targets were available, so the firing took place at an improvised target, which consisted of a plank (painted white) which contained approximately the same area as the standing silhouette of the old skirmish group and which was placed at a distance of two hundred yards.

The principal object of this firing was to compare the rapidity of fire of the new rifle with that of the Krag Carbine, and at the same time place as many hits on the board as possible. After some practice manipulating the bolt of the new rifle I was able to fire eighteen shots per minute with eighteen hits. With the carbine the best score was sixteen shots with fourteen hits. Of course after the magazine was emptied the carbine was used as a single loader. This clearly illustrates the advantage of the clip gun over others, and especially when the clip gun may also be used as a single loader when desired. In connection with this feature of the new gun it is noted that in changing from fire as a single loader to magazine fire or vice versa there is a half-way stop for the cut-off in which position the bolt when drawn back is entirely removed from the piece. In changing from one class of fire to the other the cut-off, might easily be changed by accident only to the half-way position. This would be a serious mishap in action. However, it is understood that this gun is to be used habitually with the magazine turned "On," but the possibility of a mishap ought to be removed.

My next opportunity to fire the new rifle was at Sea Girt, in 1903, where one was on exhibition during the annual meeting of the N. R. A. Here time was limited, but opportunity for any one individual was more limited. I saw a well-known member of the Bisley team "sighting in" the gun at the 1000 yard range. After many misses he was on the target with 875 yards elevation, and the next shot was a bull. He then made a string of bulls that was amazing—seventeen, if I remember correctly. This speaks well for the gun, as a long-range gun when in the hands of an expert.

During the target season of the present year I was able to get possession of the new rifle kept at Headquarters, Department of Luzon. This afforded ample opportunity to make a careful comparison between the two arms. In these islands the months of January, February and March are ideal for target-practice if the mornings only are used. Each day is almost an exact duplicate of the one before it, so it was an easy matter to get nearly equal conditions for all trials.

I shot the carbine and rifle alternately, through each course as prescribed in firing regulations.

The results show, I think, the approximate superiority of the rifle over the carbine. They are tabulated below:

MARKSMAN'S COURSE—RECORD PRACTICE

	SLOW AND RAPID FIRE SKIRMISH		AGGREGATE	PER CENT.
Carbine.....	258	169	427	85.40
Rifle.....	278	157	435	87.0

SHARPSHOOTER'S COURSE

	SLOW FIRE	RAPID FIRE	AGGREGATE	PER CENT.
Carbine.....	76	35	111	74.
Rifle.....	86	41	127	84.67

EXPERT RIFLEMAN'S TEST

	SLOW AND TIMED FIRE	SKIRMISH	AGGREGATE	PER CENT.
Carbine....	147	69	216	72
Rifle.....	159	72	231	77

AVERAGE PER CENT. FOR THREE COURSES

Carbine.....	77.13
Rifle.....	82.89

I believe the above noted difference (6%) to represent about the average difference in accuracy of the two guns. At the midranges the difference is about 6%; at the long ranges about 10%; at the two short ranges, on account of the insecurity of the prescribed positions, the personal error of the individual counteracts most of the advantage of the rifle.

This difference, of course, is accounted for by the general superiority of the new arm.

It is traceable directly, however, to two great factors, the increased distance between sights and the proper use of the sling.

Our infantry brother, except their expert shots, tell us the carbine is preferable to the rifle, but not one of them would care to exchange.

They chide us at our poor showing by comparison of scores. In years past when everybody shot the same arm at the army competitions the cavalryman held his own.

Give us the same arm and nothing will be more welcome to the cavalry than combined competitions. Major Brown in his article intimates that the sling should not be issued to the cavalry. Give us the sling or else prohibit its use in target-practice by the infantry. Now that we are to have the same arm let us have all alike and get true comparisons. The most experienced shot, and perhaps the best in the infantry, once told me that the sling was worth about 2% to him at short ranges, and 4% at mid ranges. It is worth that to any one who masters its use. It serves also to distribute the recoil of this powerful arm and take some of it from the shoulder.

It is feared that the great recoil of this new rifle will make our task with the timid recruit and third-class man a much harder one. The tried and experienced shot will make good scores with any accurate arm, regardless of physical unpleasantness. But can we overcome that gun shyness which results when the new man has his shoulder badly bruised and his mental and physical equilibrium

disturbed by such power. Can we not reduce the muzzle velocity from 2300 f. s. to say, 2200 f. s., and still have a powerful and accurate weapon? Conversation with ordnance experts leads me to believe we can. I believe the decrease in energy of recoil would more than compensate for loss in accuracy and range.

Major Brown seems to favor the open sight rather than the peep sight. If it were a question of only one kind of a sight the open sight would probably be preferable. Let us have both if practicable. The number of our best riflemen who use the peep sight is greatly in excess of the number who use the open sight, and the former are gaining advocates each year. Many use it at rapid fire and skirmish. The open sight on the new rifle is a most excellent one, and lessens the necessity for a peep. But riflemen are cranks, and will never be satisfied unless they have a peep sight.

At Fort Sheridan in 1903, a member of the board which revised the system of "firing regulations for small arms" submitted a number of questions to the competitors there assembled, asking for expressions of opinion. Among these questions was the one of mixed competitions of officers and enlisted men. Few offered an expression of opinion on the subject for the reason that the question was an open one. I do not remember that a single enlisted man expressed an opinion on this subject. Chance remarks, however, led me to believe that they were not satisfied. Subsequent investigation has proven conclusively to me that the enlisted man does not care to compete against the officer for medals. I have yet to encounter a single enlisted competitor who favors the present system. I have had many opinions from officers on the subject, and they have unanimously approved the following substitute:

Designate and assemble competitors for division competitions as now prescribed. Have them all compete on the same range together. Award all the authorized medals of the division team to enlisted men. To each officer who makes a score equal to or better than that made by the bottom gold medal man (when more than one gold medal) award an additional gold medal; to each officer who makes a score equal to or better than that made by the bottom silver medal man, award an additional silver medal; and so on for the bronze medals. In sending competitors to the army team send the authorized division team of enlisted men, and in addition thereto every officer who wins a medal in division shoot. Distinguished marksmen to be eligible to win medals at the army shoot only. In selecting the team to represent the army in the National match select the twelve highest from each branch regardless of whether they be officers or enlisted men, for that is the army against the navy, marines and the National Guard.

To further emphasize the injustice of the present scheme the

following award of medals at the various competitions held in 1904 (including the Philippine Island) is noted:

	GOLD MEDALS	SILVER MEDALS	BRONZE MEDALS	TOTAL
Won by officers.....	17	25	28	70
Won by enlisted men	17	44	89	150

The total number of competitors was nearly as follows:

Officers, 140; enlisted men 920.

From the above the following is apparent: that half of the competing officers won medals; that one-sixth of the competing enlisted men won medals; that more than one-half the medals won by officers were silver or gold; that nearly two-thirds of the medals won by enlisted men were bronze; that officers won as many gold medals as the enlisted men won with about one-seventh as many competitors. But this is as it should be under the present system, for is not the officer the instructor, and does he not have all the advantage of opportunities? But surely it is not justice. I doubt if many of us ever gave this subject much thought. I should like to see others express an opinion with a view to speedy change.

CAMP SPOFFSBURG, P. I.,

June 21, 1905.





The Campaign with Kuropatkin.*

THIS Book gives a very entertaining account of the correspondent's experience with the Russians from the outbreak of the war with the Japanese, through the battle of Liao-Yang. The author takes a most impartial view of the conflict, and though a British subject, appreciates the strong points of the Russians as well as of the Japanese. He says:

"There is no stamp upon the Russian officer as there is upon his brother of Britain and of Germany. In his diversity is at once the strength and the weakness of the Russian as an officer. As a student the Russian staff-officer is a gentleman and a soldier of rare intellectual attainment.

"The adaptability of the Russian is amazing, the result of a wide humanity, a ready sympathy.

"Strangely enough he draws most naturally to the Englishman and the American. These he respects. The Russian is a man of strong passions and wholly unmodern sincerity where his suspicions are not aroused. He loves and hates, sins and repents, has ideas and beliefs. * * * His nearness to nature is at all times apparent. His faults and his virtues are those of a strong race, of a man whose blood runs warm in his veins.

"The humanity of the Russians rises triumphant above their vocation, and one likes them for their breadth of views. So far it has been my good fortune to meet only the better class of officer and of man. In him I have found a man we British have lost much by cultivating so little.

"Much vile libel has been spread abroad about the Russian soldier's treatment of the Chinese in the war area. So far as I have seen (and I have seen most of the country he has traversed) the Russian soldier has behaved toward the Chinese with remarkable restraint and a simple-hearted good fellowship."

The Japanese success in the war has been due to the scientific intelligence of the leaders and the barbaric intensity of the fighting men. Much is written of the civilization of the Japanese nation and their excellence in battle is attributed to that. As a matter of

**The Campaign with Kuropatkin*, by Douglas Story. Fully illustrated from photographs taken by the author. 8vo, 301 pp. London: T. Werner Laurie. Philadelphia: J. B. Lip-pincott Company. 1905.

fact their superiority to Western troops is due to the effective barbarism of the soldier in the ranks as much as to the scientific direction of the men in the War Office at Tokio.

The general course of events and the battles of Wafangho, Yangtze-ling and Liao-Yang are briefly and lucidly described, and the author shows a good appreciation of the effect of modern weapons.

The chapter on "The Long Feud" ends thus: "Japan may close Russia's open ports in the China seas, but in so doing she will only force Russia back against her old-time enemy, Great Britain. It were well to realize this fact in all its bearings, to recognize thus early that natural law is more immutable than was ever statute law of Mede or Persian, to accept the inevitable, and to come to terms with Russia when those terms can be most advantageous to Great Britain. Britain's blindness is Germany's opportunity."

W. R. L.

The Man Roosevelt.

THIS book, which the author calls a portrait sketch rather than a biography, presents Theodore Roosevelt as politician, reformer, author, sportman, father of a family, and President of a great nation.

As might be expected from its scope, it is discursive and general in its treatment; but, nevertheless, it touches upon each part of its theme with illuminating detail. If the political side of the President's life receives a large share of attention, it is offset by several chapters revealing the domestic and personal sides of his character, which we venture to think are more to be expected from the title of the volume. Perhaps the most useful page of this department is that which explains what Mr. Roosevelt really said about race suicide.

On the whole, the book serves a useful purpose in painting in simple colors the life and character of Theodore Roosevelt without that undue enthusiasm for its subject which is often the condemnation of a biography.

It throws a generous light upon a strong and resolute life, and enables the reader to form a fair judgment of the "man, not as he might have been, nor as we might have liked to find him, * * * but of the man as he is."

E. B. S.

Distinguished Officers of the Army and Navy.*

UNDER the above misleading title, has recently been published a volume of short biographies of men who have achieved more or less success in the world, and most of whom have been commissioned officers in either the regular or volunteer force of the nation at one time or another, but in view of the title and in consideration of the omission from the list of nearly all those soldiers and sailors whose names are household words, it is impossible for the reviewer to retain his self-respect and at the same time be gentle or even kind in criticism of this work.

**Biographical Sketches of Distinguished Officers of the Army and Navy.* New York: L. R. Hamersly. 1905.

One of the subjects selected is apparently "famous," because he has been successful in operating a hotel at a well-known resort; another bears the blushing honor through achievements in the life insurance field—possibly both are entitled to distinction in that vocation which made Robin Hood and Captain Kidd famous.

The very few distinguished officers who are selected for places in the book are entitled to sincere sympathy; we are satisfied that they could not help it. Those who are not included have the satisfaction of being in a class with Grant, Sherman, Sheridan, Hancock, Thomas, Logan, Lawton, Corbin, Farragut, Dupont, Dewey, Evans, and scores of others whose names *are* historical. In short, the book, with the few exceptions referred to, is a poor specimen of cheap claptrap, with all the earmarks of a personal advertisement scheme, and is unworthy a place in any library.

The printing is good—the binding is in harmony with the text and offers the encouraging hope that the volume will soon fall to pieces.
H. O. S. H.

The War Between the Union and the Confederacy and Its Lost Opportunities.*

THIS work is principally a personal narrative of the experiences of the author in the War of the Rebellion, in which he took part as an officer of the 15th Alabama Regiment, from Captain to Colonel. It contains the history of that regiment and its part in forty-eight battles and engagements. There are also presented what the author claims to be a justification of secession and throughout arguments based on the varying conditions, as they existed during the war, to show that the Confederacy should have succeeded; a criticism of Jefferson Davis, the Confederate Congress and some of the general officers of the Confederate and Union armies and includes the author's observations and experiences in the war with Spain.

The work runs through fifty chapters, the first five of which are devoted to the causes of secession and the war, and the attitude of the secessionists and the Union States towards each other, immediately preceding hostilities. These views and arguments are naturally written from the Southern, and it may be said, secession standpoint, being those held by the extremist Southern statesmen who finally succeeded in impressing them on most of the Southern people. They are apparently not "reconstructed" in any degree from comparison with the arguments on the other side, since the war, accessible to dispassionate inquirers, but rather, the author being at that period a young man of necessarily limited range of knowledge of those very complicated questions, has evidently drunk deep of the waters which flowed so copiously from fountains of the Davis and Toombs type, at the time, but which subsequent events rendered so stagnant.

Personal reminiscences, well told, of that exciting and history making period, are always of great interest as setting down details not found in war histories, and the author has certainly given us a

**The War Between the Union and the Confederacy and Its Lost Opportunities.* By William C. Oates, Colonel in the Confederate Army; Representative in the U. S. Congress, 1880-1894; Governor of Alabama, 1895, 1896; Brigadier General, U. S. V., in the War with Spain, 1898. Pub.: The Neale Publication Company, New York and Washington. 1905.

highly interesting and well told narrative. There could not be found a better description of the peculiar conditions which the surroundings imposed, in the enlisting of soldiers and the organization of troops for the Confederacy than is given by the author. His descriptions of the incidents of battles and campaigning are vivid and make excellent reading. His arguments to sustain the contention that secession could and should have succeeded will appeal to the speculative and imaginative mind.

The entire work is written in such a candid strain as to excite the admiration of the reader for the evidently sincere and straightforward character of the author, from which a positiveness bordering on obstinacy, which crops out in views and criticisms of men and measures, in no wise detracts. While all will not agree with some historical data given by the author on information and belief, the work as a whole is thoroughly readable and enjoyable by those who are attracted by the romance of the stirring events of forty years ago, as well as by actors in the great drama.

E. E. B.

The Russo-Japanese War.*

THIS volume is by Thomas Cowen, who was one of the war correspondents of the *Daily Chronicle* from February to May; then owing to the severity of the censorship he ceased sending his dispatches, but he still remained at the seat of war, and in September sent his manuscript from Korea.

The book describes the Japanese attitude. The Chinese and Koreans were helpless and hopeless; if China invited the partition of her provinces, then Japan cannot afford to let them all be taken by others for probable use against her.

The Russian point of view. Of Russian expansion generally there is undoubted justification. It is necessary, because Russia is really overcrowded, and much misery results. The population is agricultural, and much of the land is poor. The peasant needs clothes, tools and so on; in fact he needs a market where he can sell his corn and buy goods. Siberia could be made a paradise in the course of time if it were not so cut off from everywhere. Siberia has no ice-free port (in all Russia there is hardly one). "But here," a Russian would say, "is a fertile country, occupied by people who do not use it" properly, never will as long as they are left to themselves. Why not take it?

The first stages of the war are described somewhat in detail, and in the last hundred pages the military operations from the Yalu to Liao-Yang are described in outline.

W. R. L.

**The Russo-Japanese War.* From the outbreak of hostilities to the Battle of Liao-Yang. By Thomas Cowen. With illustrations, maps and plans. London. Edward Arnold, 41 and 43 Mark Lane, Strand, W.C. 1904. (8vo. 343 pages.)

Editor's Bulletin.

Change of Quarters for Library and Museum.

THE Secretary announces the removal of the contents of the Library and Museum, and of the Offices of the Secretary and Treasurer of the Institution from the rooms in the Quartermaster's Building to the Clock Tower Building in the grounds of the New York Arsenal, on Governor's Island, N. Y. H. The new quarters will afford more than double the space heretofore available, and relieve the congestion which for some years has prevented a proper exhibition of the Relics and Trophies belonging to or in the custody of the Institution.

A handsome room has been fitted up for the use of the Officers and Council; steam heat and electric lighting plants have been installed, and many objects of historical interest, heretofore hidden from public view for want of room, have been unpacked and displayed to advantage. The full-page illustration facing this page is from a photograph of the north wall of the Museum.

In every way the change is for the better, and the thanks of the Institution are due to the Chief of Ordnance and the Department Commander for their efforts thus to promote the interests of the Military Service Institution.

Loans to the Museum.

Since the change of quarters (completed August 15) the number of visitors to the Museum has perceptibly increased, and a renewal of public interest in that department of the Institution is anticipated. Officers of the Army or others possessing military curios or trophies, especially those acquired during their service in China, Cuba, or the Philippines, are invited to place some of them here on exhibition as loans for a limited time. Under Army Regulations, articles intended for the Museum which are turned over to the Post Quartermaster and marked:



THE MUSEUM—NORTH WALL OF CLOCK TOWER BUILDING.

"Military Service Institution, Governor's Island, N. Y.,"
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The
Seaman
Second
Prize.

At the stated meeting of the Council, August 18, 1905,
it was unanimously

"*Resolved*, That the offer of Major Louis L. Seaman
(late) U. S. V., to add to his annual prize of \$100,
a second prize of \$50, for papers on subjects having
a bearing on the general study and practice of 'Mili-
tary Hygiene,' be accepted and the Secretary is
instructed to convey the thanks of the Institution
to Major Seaman for his generous action in the
matter."

Return
of a
Confed-
erate
Flag.

An application having been made for the transfer
of the Battle Flag of the 18th Alabama Regiment, C. S.
A., now in the Museum, to the custody of the Depart-
ment of Archives and History, State of Alabama, the
Executive Council has directed the Secretary to comply
with the request.

Award
of
Hunt
Prize.

The Hunt Prize for 1905—Fifty Dollars and Certificate
of Award—has been given to Captain Edward H. Schulz,
Corps of Engineers, for the best short paper on an artillery
subject, published in the JOURNAL OF THE MILITARY
SERVICE INSTITUTION during the twelve months ending
July 1, 1905, viz.: "Land Defense of Seacoast Fortifica-
tions."



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1905

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N. Y. H.

THE JOURNAL

NOVEMBER-DECEMBER, 1905



OME of the papers approved for early publication in this JOURNAL.

I. "ATHLETICS IN THE ARMY."—

1. By Major R. L. Bullard, 28th Infantry.
2. By Capt H. S. Hawkins, Subsistence Department, U. S. A.

II. "MODERN ARMS, MODERN WARFARE AND GOVERNMENTS."—By John Brisben

Walker, Esq. (Editor, Cosmopolitan Magazine), being a lecture before the M. S. I. at Governor's Island, N. Y.

III. "DESCRIPTIVE MILITARY RECORD AND ACCOUNT BOOK FOR ORGANIZATIONS OF THE MILITARY SERVICE."—By Capt. Howard R. Hickok, 15th Cavalry.

IV. "FIELD AND SIEGE OPERATIONS IN THE FAR EAST."

(Being the fourth of the series.)—By Col. W. R. Livermore, Corps of Engineers; which will cover a professional review of the operations attending the siege of Port Arthur. Illustrated by maps and diagrams.

V. "IMPROVEMENT OF HORSES FOR MILITARY PURPOSES."—By Lieut.-Col. E. E. Dravo, Subsistence Department.

VI. "THE TRAINING AND PERSONNEL OF VOLUNTEER TROOPS."—By Capt. G. D. Snyder, (late) N. G. P.

VII. "ORGANIZATION AND FORMATION OF INFANTRY TROOPS MOST SUITED TO PRESENT BATTLE CONDITIONS."—By Lieut. G. M. Brooke, Artillery Corps.

VIII. "THE NON-COMMISSIONED OFFICERS, THEIR EFFICIENCY AN ESSENTIAL FACTOR IN OUR ARMY."—By Lieut. G. A. Wieser, Fifteenth Infantry.

IX. "TYPES AND TRADITIONS OF THE OLD ARMY."

Recent additions to this series comprise "Old Fort Put," from old MSS. —By Brig.-Gen. J. P. Farley, U. S. A.

THE PUBLICATION COMMITTEE invites contributions of original papers, translations and comments upon current topics. Attention is called to "Gold Medal," "Seaman," "Short Paper," and "Santiago" prizes described elsewhere.

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Annual Prizes, 1905

(For Rules governing awards, see January, March
or May numbers.)

Gold and Silver Medals

First Prize—Gold Medal, \$100 and Life Membership.

Second Prize—Silver Medal, \$50 and Honorable Mention.

Subject: "THE ENLISTED MAN'S CONTRACT WITH THE GOVERNMENT; THE MUTUAL OBLIGATION IT IMPOSES AND HOW ITS VIOLATION MAY BEST BE AVOIDED."

The Seaman Prize

First Prize—One Hundred Dollars in Gold.

Subject: "HOW FAR DOES DEMOCRACY AFFECT THE ORGANIZATION AND DISCIPLINE OF OUR ARMIES, AND HOW CAN ITS INFLUENCE BE MOST EFFECTUALLY UTILIZED."

Second Prize—Fifty Dollars.

Subject: "MILITARY HYGIENE, AND HOW CAN THE PEOPLE OF THE UNITED STATES BE EDUCATED TO APPRECIATE ITS NECESSITY?"

The Santiago Prize

Prize—Fifty Dollars.

Subject: "FOR THE BEST ORIGINAL ARTICLE UPON MATTERS TENDING TO INCREASE THE EFFICIENCY OF THE INDIVIDUAL SOLDIER, THE SQUAD, COMPANY, TROOP OR BATTERY, PUBLISHED IN THE JOURNAL OF THE MILITARY SERVICE INSTITUTION."

Short Paper Prizes

Prizes—Fifty Dollars and Certificate of Award.

Subjects: BEST ESSAY ON MATTERS DIRECTLY AFFECTING THE INFANTRY ("HANCOCK"), CAVALRY ("BUFORD"), ARTILLERY ("HUNT") AND THE GENERAL SERVICE ("FRY"), RESPECTIVELY, PUBLISHED IN THE JOURNAL DURING A TWELVEMONTH.

Announcement

Back Numbers of the Journal

Copies of Numbers 1, 2, 3, 4, 79, 98, 99, 117 and 119 of the JOURNAL OF THE MILITARY SERVICE INSTITUTION OF THE UNITED STATES may be disposed of at a premium by communicating with the Secretary, M. S. I., Governor's Island, N. Y.

Publisher's Department.

VEHICLE MAKERS FOR THE WORLD.

(Reprinted from August "World's Work" Magazine.)

The bullock wagon of Egypt, whose cumbersome wheels still crunch the sand of the roads along the Nile, is in one corner of the Palace of Transportation, and on the opposite side of the great stretch of floor, under a big American flag, is the Studebaker vehicle in its scores of forms. Thus, in a walk of two minutes, one can cover thirty centuries, and bear the greeting of the Sphinx to the Flag and all it stands for in industry and achievement. For industry and achievement in America are but the commercial expression of freedom, the hammering out, with the free arm, of the ideas that take shape in the free man.

And these great Studebaker exhibits, covering nearly 10,000 square feet, are deeply impressive embodiments of the free industrial spirit of the country. Moreover, they are very interesting in themselves. But behind them loom the great factories at South Bend, and the fifty-two years of cumulative growth, from a little blacksmith shop, with a yearly product of two wagons, to the place of conceded leadership in the vehicle industry of the world. This is progress that is typically American. It is the sort of progress that has changed the great valley of the Mississippi, in a century, from a wilderness into the mightiest industrial empire of the ages. Mankind can point to no achievement comparable to this transformation in all its long march from the Stone Age until now.

To have been a part of the last half-century in this wonderful transformation is the distinction of the Studebakers. That is their real exhibit—it is the country whose cities they have helped to build, whose farms and mines they have aided greatly in developing. Many of the prairie schooners that sailed across the plains in the fifties were Studebaker wagons. The roads into the far Northwest followed trails that had been broken by Studebakers. In the fat valleys of the Miami, the Illinois, the Missouri—all over the broad West, they bore the loads.

And when the farmer or the business man had reached the point where he wanted a carriage for his family, the Studebakers were ready to supply him, as they were later with an automobile. And the skill they had acquired in making wagons they employed and developed in building carriages, until their vehicles have come to be accepted in every part of the world as the standard of excellence. There are shown in their exhibits at the Fair types of seventy-five vehicles, such as broughams, victorias, depot-wagons, coupe rockaways, opera-busses, phaetons, top-boggies, road-wagons, runabouts, extension and canopy-top surreys, electric and gasoline automobiles, farm-wagons, dump-wagons, coal-wagons, ice-wagons, express and truck-wagons, merchants' delivery-wagons, sheep-camp and mountain wagons; and there is, besides, a splendidly equipped harness and stable accessory department. This contains about one hundred sets, of different styles and

grades, of four-in-hand, tandem, double and single brougham, double and single road-harness, surrey-harness, and, in fact, almost all kinds of harness for pleasure and teaming purposes. There is a line of riding-saddles shown which are made not only from an artistic point of view, but for comfort. In stable furnishings there are blankets, suits, brushes, whips, coachman-suits, lunch-baskets, dash-clocks, lamps, road-kits—in fact, the visitor will be amazed at the wide variety included in these great Studebaker exhibits. The product of the Studebakers fills a train-load of freight-cars every working day. In marketing it, there are five thousand dealers, in all parts of the United States, besides trade representatives in every section of the world, and there are great Studebaker repositories in Chicago, New York City, San Francisco, Portland (Oregon), Kansas City, Salt Lake City, Denver, and Dallas. Surely, the blacksmith-shop of fifty years ago was an acorn from which has come a spreading oak of trade and industry. And that simile really suggests the manner of the Studebaker growth. It has been like a tree. Each year there has been added a widening ring of accomplishment. And like a tree, the great business has grown from within. There has been no compelling hand from without, grasping widely scattered factories and bringing them into a giant consolidation, as has been true in many industries; but, nurtured by the sap of its own strong life, it has become a business oak, strong through and through.

* * *

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The New York Metal Ceiling Co. has long been identified with the Building Trade as makers of Metal Ceiling, and their reputation for a high standard of quality and good service in this line gave the trade confidence that "ENAMETILE" would measure up to every claim, and practical results have proven this confidence was not misplaced.

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REVOLUTION IN THE "KEEPING" OF MILK.

Few people stop to think how universal and important, as a part of our diet, is ordinary milk. Used from time immemorial, by every civilized nation of the world, it is everywhere recognized as a most nutritious ingredient of our daily food. But it unfortunately does not "keep," and from the moment it has been drawn from the udder it begins to change. How to hinder or prevent this, and be able to keep milk indefinitely, has been the dream of inventors.

During the first half of the last century, certain foreign inventors succeeded in evaporating a part of the water from milk, and with the addition of cane sugar, made the product now known as condensed milk. (Patents of de Heine, 1810; Newton, 1835; Grimwade, 1847; and others; and more especially the process of de Lignac, which received the silver medal at the French exposition of 1849). Still this was only the beginning after all, or the first step for the more complete method which would, by removing all the water and reducing it to a powder form, compose a product which could be transported to all parts of the world, and be used as desired, making it sure that the remainder would be available whenever wanted, and not, like ordinary condensed milk, spoil soon after the container was opened.

The solution of this problem was accomplished, after much labor and experimenting, by Mr. Wm. Horlick, of Racine, Wis., some twenty-five years ago. By combining pure, rich milk with the extracts of malted barley and wheat, it was found possible not only to preserve the milk indefinitely, but also to do this by his special process, so as to obtain in powder form, a product far more nutritious and digestible than ordinary or condensed milk. All the useless water in condensed milk has been removed, and instead of cane sugar so often objectionable to delicate stomachs, the nutritious extracts of the malted grains are used to enrich the milk.

Hence this unique product, Horlick's Malted Milk, is so convenient that a delicious food-drink may be made in a moment by simply stirring the powder in water, so stable that it is used in the most trying climates, is preserved indefinitely, and furnishes the most delicate, palatable and digestible food-product. It has received the endorsement not only of eminent physicians everywhere, but also the approval of actual use in thousands of homes in all parts of the world.—*Scientific American, Export Ed., July, 1905.*

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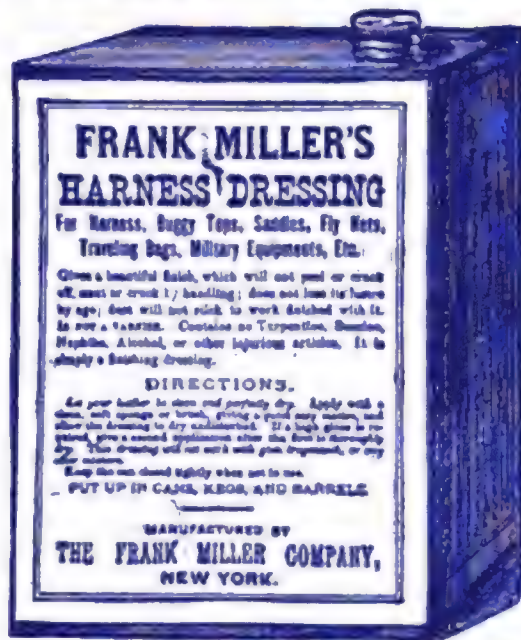


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"I cannot help plead to my countrymen, at every opportunity, to cherish all that is manly and noble in the military profession, because Peace is enervating and no man is wise enough to foretell when soldiers may be in demand again."—GENERAL SHERMAN.

Vol. XXXVII. NOVEMBER-DECEMBER, 1905. No. CXXXVIII.

ATHLETICS IN THE ARMY.

I.

BY MAJOR R. L. BULLARD, 28TH INFANTRY,
SUPERINTENDENT OF ATHLETICS, FORT SNELLING.



URING a large part of our history the whole thought and effort of the American people have been directed to one thing, material, industrial development, money-making. Other things have been neglected, ourselves, and more especially the care, training and development of our bodies, even that attention which we have given to our mental development being, in general, in disregard and even contravention of the natural rights and demands of the body. The result is that we have begun to be a nation of nervous wrecks. Now, within the last few years this has dawned upon our intelligence, and there has been an awakening to the necessity of physical training to make and keep a healthy body and a sane mind. This is the meaning of the great bulk of literature, books, papers and magazines that have lately sprung into life devoted to athletics, outdoor sport and physical culture. They are an appeal, a recognition of the need and an expression of a desire for better physical training and development. They are not a sudden display of a love of sport heretofore latent in the public. Soldier or civilian, we are no less for business and no more for sport than we have all along been. It is not a question of sport at all, as many, especially in the army,

mistakenly take it, but of physical training for serious purposes, our life and business.

This revival of athletics, while widespread, is by no means general. Though large as a whole, and though we read and hear much of it, the proportion of the general public who care a straw for athletics is relatively very small, and in the army where, on account of younger men and less intentness on wealth-gathering, we might naturally expect a greater, this proportion is no larger. Here, as above remarked, there has been among our leaders in athletics a tendency to handle the matter as largely for play, sport, amusement, like college games, and but slightly for practical training.

Notwithstanding then the enthusiastic articles that fill our army magazines and newspapers, in spite of the appeals and directions of numerous orders, manuals and schemes, notwithstanding great field-days, meets, etc., and the full and enthusiastic reports thereof, we all, officers and men, at the average army post, know that in our everyday life the great bulk of us are brought up to the subject of army athletics only after all dodges and excuses have failed, and that, in general, we regard a field-day as an infernal nuisance and bore. Why is it?

In considering athletics for the army, the first question is, Are they a fad or are they of serious consequence? If a fad, the sooner they have run their course the better; if of serious consequence, if necessary or valuable in the preparation of the soldier for his duty in peace, and especially in war, the sooner the better they be reduced to a system and made an authorized, permanent, prescribed part of military training, like drill and target-practice. The consensus of army opinion is that some better physical training than we now have is not only desirable, but necessary, and that athletics in some form have come to stay with us. However, we may, as in the past, have temporarily forgotten it, trained bodies are and always will be essential to effective soldiers, and we had better sooner than later squarely face the question and make proper provision to try to make and maintain them.

The present state of athletics or physical training in the army is unsystematic, irregular and uncertain in the extreme. The schemes are as various as there are departments, posts and even companies, a matter of suggestion and interest in-

stead of prescription and order, dependent upon the discretion, the good will or the initiative of officers to whom the matter may in various posts be turned over. Discretion, good-will, initiative—I am the last to wish to suppress them. They are good things, but not the best. A system is the best—a definite, fixed system, the same for all, prescribed for all, understood by all. It is the only thing that operates steadily, regularly and with uniform results. Within such a system there is always still room enough for the exercise of all the discretion, good-will and individual initiative that are likely ever to prove profitable.

The present trouble with army athletics is:

1st. *We are wasting time and effort trying to do things by persuasion and encouragement when we could better do them by order.* If, as we know and feel, athletics are military training and of immense value in the preparation of the soldier for war, why do the long, rambling appeals and interest-encouraging exhortations called “orders” continue to issue from various headquarters? Why can the methods of instruction not be ordered instead of merely suggested or pointed out? If we relied upon persuasion, encouragement and personal interest, how much drill and target-practice would we have to-day? In its essentials, athletic training is in the same class with drill regulations and target-practice, and should be handled in like manner, by order, and not, as at present, by exhortation.

2d. *In athletics we are doing by an unmilitary system of superintendence and committees things that should be done by the existing military organization.* We are split up in our ideas of what athletics are or should be. In one place they are pure sport, in another and in general a queer mixture of the ideas of sport and training, nowhere what they should be, physical training, pure and simple. In consequence of these half-and-half views we are trying to apply methods of sport in fancy to the purpose of training—in fact, have gone many steps backward, laying aside our military organization for the unorganized civilian methods of working by superintendents, committees, etc. If athletics have any value at all, it is as military training. Now for military training the military organization was solely and specially designed and devised. For this it is good, and some form of it is found necessary and is used almost everywhere where men are

trained in any numbers for anything. Yet we have in some sense discarded or at least not used it in army athletics, but have detailed instructors, superintendents and athletic committees from officers and men who have little or no connection or authority in military organization over the men with whom they are to operate. This has come about apparently from the idea that the military organization is not adapted to the subject. If military organization and methods can be applied, as we know they have, in spite of jeers and adverse predictions, been with signal success applied to the training of the Hospital Corps in the care of the sick and in hospital attendance, for what that has to do with the training of men for any purpose are they not adapted? The care of the sick and hospital work in general are things infinitely further removed from drill and the military domain than are the subject and the purpose of athletics. The idea that the military organization and methods are not suited to athletics is absurd and should be gotten rid of, and our existing military organization used to the full if we wish army athletics ever to bring any adequate return for the time and worry we are having with them.

3d. *We regard athletics too much as sport and not as training.* The element of sport must be subordinated--better--completely swallowed up in the idea of training. Mongrels are always a bad breed, and combination tools never work well. In teaching and training, simplicity, one thing at a time, unmixed, uncomplicated with others, is a first principle. Besides, the general revival of athletics, which brought athletics into the army, was a revival, be it repeated, was a revival of attention to physical training and development of the body, not any sudden exhibition by our people of a love of sport and play. The American people are for business, not sport or play, and our army is of the same mind, as is shown by their lack of interest in army athletics as at present conducted. 50,000 Americans, taken at random, are not going to be made sports by suggestion, exhortation, or even by order; but 50,000 American soldiers can be made sufficiently athletic for all military purposes by turning athletics from sport, play and trifling, to training and the serious business of preparation for war. So long as this idea of sport remains predominant, or even prominent in army athletics, just so long will serious men take no interest and

army athletics remain in their present unsatisfactory, half-authorized condition. Half-authorized, I say, because no thoughtful authority is willing to appear as too full a promoter of the serious establishment in the service of a thing which smacks so strongly of mere play. Just so long, also, will we continue to use our present unorganized, ineffective, civilian methods of working by committees, superintendents, etc., instead of by an efficient military organization, for there can be no contention that the military organization is suited to the purposes of amusement or sport. It is not; it is for business and training.

4th. *We are doing athletics in disjointed, irregular, ununiform ways when it is practicable to do them by a system.* The variable, unsettled condition of athletics has already been remarked. There is little fixed, defined or obligatory in them. They depend upon the interest that can be aroused in them by appeal, exhortation, or by the popularity of the methods of their management. Could anything be more unbeseeming the military service? If sport, cease to try to make it official; if training, make it authoritative. Our drill regulations, history shows, passed through stages of uncertainty, ununiformity and non-prescription, when for tactical instruction we were more dependent upon suggestion, exhortation or personal enthusiasm of officers, more upon the good-will and interest that could be appealed to and aroused in the men than upon any authority or system. In other words, "tactics" were once where athletics are to-day. There were all schemes and none. The same was true of target-practice in its earlier days, and but yesterday courts-martial forms and methods were as varied as there were departments and department judge-advocates. Now that is all past, and these are to-day such definite, precise, formal, authoritative and prescriptive systems, and appear so necessarily and properly such that we can hardly think of them as ever having been otherwise. Athletics, I mean the training part, not the sporting fad part of them, are worthy and capable of like development. Let it come. We feel its need. To wait for years and the slow process of evolution to bring it would be mere dawdling. Let us have it now in a system, stripped of the play sport idea, adapted, as it easily may be, to the military organization, the squad, company, etc., made and provided by the same authority, the General Staff,

and prescribed in the same manner as the drill regulations and target-practice. To such a definite and authoritative system must athletics come if they are ever to be anything more than at present, sport to the few, a nuisance to the many.

II.

BY CAPTAIN H. S. HAWKINS, (Cav.)

SUBSISTENCE DEPARTMENT, U. S. ARMY.

There is no doubt that we Americans run to fads, and, running these fads into the ground, the reaction follows and we settle down to a conservative and reasonable use of what was at first an exaggerated and ill-considered idea. So it is with athletics. The system of athletic training in our colleges and academies has much to be condemned. That it will eventually settle down and become in reality a useful training instead of a craze is probably true. In the meantime, however, many individuals are injured by overdoing athletics.

This craze or fad has reached the army. We are now not only encouraged in athletics, but it is in many instances made compulsory. To make physical training compulsory is commendable provided it is not overdone and provided that the system is one which is calculated to injure none and to benefit all. But we are far from this. We will consider, first of all, the athletic games played throughout the army, but not as yet made compulsory. These are baseball, football, handball, basket-ball, golf, tennis and polo. All these, if not overdone, are of benefit to the participants; but let no one imagine that they are of benefit to a whole command. They should be regarded as recreations and as such should be encouraged, but never forced. The weakest link in a chain determines its strength, and so it is with a command of soldiers. These games benefit, and in some cases injure, a select few who are already well developed and who usually are physically superior to their comrades. If officers or enlisted men wish to play these games they should certainly be allowed to do so. A healthy recreation is thereby provided for both players and spectators. This is as much as is accomplished. Of these games baseball is perhaps the best, as more men can and do take active part than in the case of any other. It is less violent and less liable, therefore, to

injure the constitution of the player. Football is participated in by only the strongest and those needing physical development the least. Handball, basket-ball, tennis and polo benefit a few, but like all other games are liable to be overdone. Golf is perhaps the best for the average individual, as it is not violent and yet affords plenty of exercise in the fresh air. It is not played by enlisted men. Polo is a violent game which should be begun gradually and carefully. It does, unquestionably, improve horsemanship and increases the knowledge of bitting and saddling. Like football it increases self-reliance and calls for courage. From its nature it is purely an officers' game, and at posts where it is played with enthusiasm it usually includes about one half the commissioned force. It has the disadvantage of being expensive. Tennis is another game which is very beneficial, but most of us, instead of limiting ourselves to the proper amount, play and play until we leave the courts nearly exhausted. After all is said, therefore, these games, if not overdone, are beneficial to the few who play them, but should not be regarded as any serious part of the physical training of a military command. They are merely healthful recreations, and are played by those who do them the best and need them the least.

But now we come to another form of athletic games, sometimes made compulsory, and which, in my opinion, is absolutely pernicious in the military service, viz., a collection of sports held on what are called field-days. I do not mean that there is any objection to soldiers running races or engaging in any other contests, but it is the collection of these sports going to make up a field-day about which the army is going crazy. In some departments field-days have been ordered to be held at each post every month, and to end in an annual departmental meet. They are made part of the physical training of the soldier. Let us see how much training he gets from them. If a troop, battery or company has two men who can run they are selected every time to do the racing. Nobody else in that organization would think of running also. They merely clap their hands at the performances of their representatives. The whole organization does not run to see who is the best man. The runner knows already that he can run, and unless he knows it he will take no part in it. So it is with the jumping and all the other forms of field-sports. Some five or six men in each organiz-

ation, the best men, are the only ones who take any active part. Then on the selected field-day three men, the flower of the flock, run their hearts out to capture prizes. The very same men, because they are the best all-round men, compete in almost every event. In the races we see these men coming in at the finish nearly fainting with their exertions, to be caught in the arms of their backers and born off to be rubbed down, braced with brandy and lemons, and made ready for some other contest. At the end of the day the faces of the contestants look drawn and white and the field-day has been a wonderful success. The best men we have are thus made to compete to exhaustion, and the result is a lessening of the capabilities of the best developed men and no increase in the development of the others. Even if those who take part are not injured, what, pray, is the benefit to the command? These men are already developed as far as they probably ever will be, and all they need is a light healthful form of exercise to keep themselves in trim. The men who need training get none. Therefore, if the men who need training get none and the men who do not need it overdo it, the result is distinctly harmful. It is argued that field-days encourage the men to practice these sports among themselves, but this is not true. As I have said, it is only those who can already perform creditably who take any active part. No matter how well conducted, no matter how carefully planned, no matter what efforts are made to keep men from injuring themselves, no matter how many efforts are made to get large numbers of participants, field-days in their present form (borrowed from the colleges) are all the same in the particulars named. They are absolutely pernicious. To make them compulsory may look like energy on the part of a commander, but he is injuring his command without any least particle of corresponding benefit. They are not necessary as recreations. The other games suffice. In bygone times the only field-day for soldiers was the Fourth of July. Even then the sports were more laughable than violent, and the officers held somewhat aloof in dignity and reserve, and discipline, upon which I shall touch later, was unaffected. A commanding officer who double times his whole command around the parade-ground every morning may be criticized for not training his command by having field-days. But he is right. Double timing, calisthenics, musical drills, gym-

nastics, something to include the whole command, carefully regulated and limited, are the only forms of athletics which should be made part of the soldiers training. Even in this great care must be had. It must not develop as a fad or craze. The average soldier gets plenty of exercise. The trooper who grooms his horse twice a day, takes his turn in cleaning out the stables and at the other garrison fatigues, goes to drill, has exercises in horsemanship, is usually ready to turn into his bunk without any additional work. In the winter time moderate exercise in athletic drill may be necessary. Field-days, in addition to their other evils, are necessarily always held in good warm weather when the soldier is already getting plenty of work.

Field-days should be prohibited, except in the form I shall at present indicate; other athletic games should be allowed as recreations; physical drills for all should be had only when soldiers have not sufficient work in the performance of their ordinary duties and their ordinary training as soldiers. Constant practice in minor tactics will give the soldier plenty of exercise and leave little room or necessity for further care about his physical development.

There is difference of opinion about the above phases of athletics, and there is still greater difference of opinion about another phase—the effect on discipline. My experience has led me to believe that while, in some instances, an officer may take active part in athletics with enlisted men without apparent loss of discipline, nevertheless, the practice is a bad one and should be disallowed. But on field-days, whether officers actually compete or not, discipline inevitably suffers. I have seen many field-days and I have seen none where this statement does not apply. If an officer doubts this let him attend as many field-days as possible, bearing this phase of them constantly in mind. He will see officers coaching their men in familiar terms, sometimes actually hand rubbing the legs of a sprinter who expects to win honors and money prizes, sometimes patting a contestant on the back, or cheering wildly, or wrangling with other officers to their mutual loss of dignity in the eyes of their men. He will see the soldier spectators converted into a mob like that which ornaments the bleachers at a baseball contest between two country towns, forgetting themselves entirely and using, under the very noses of their officers, vulgar slang, coarse wit, pro-

fanity and even obscene remarks. It may be argued that in well-disciplined commands such things would not occur. But the point is that they do occur and even in well-disciplined commands no opening for such things should be allowed. I have seen these things occur with varying frequency in cavalry, infantry and artillery commands, and I have never attended a field-day that I did not come away with a feeling that discipline had suffered. This may be a serious reflection on the discipline of the army; but if our discipline allows such things to occur, then the opportunity for their occurrence should be taken away. I think it is not so much a reflection on the discipline of the army, as it is upon the American character. Everyone knows that the American is the hardest mortal on earth to discipline, and we should be all the more careful in avoiding opportunities for its relaxation.

Field-days in their present form are thus from every standpoint objectionable. As to making them compulsory it would seem that this is only a manifestation of the fad or craze which has come over us.

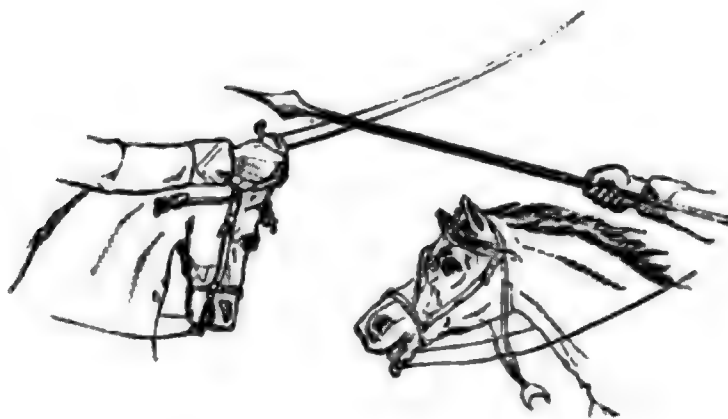
From the above remarks it would seem, unless read very carefully, that the writer is opposed to athletic training for soldiers. This is not so. I am not opposed even to field-days in the proper form and time.

The only possible object in training the soldier's body is to enable him to march and to endure fatigues incident to a campaign, and in garrison to keep him in health. If this be so, then marching is in itself the best training we can give. When the soldier is practicing this and has also the unavoidable fatigues incident to guard duty and the proper management of a post, it is unwise to add any athletic exercises except a short setting up drill to expand his lungs and take the crooks out of his back. This adds no fatigue, but is really restful in its effects. When, however, as often occurs, especially in the winter months, there is little to exercise the soldier's body, then a mild form of athletics in the gymnasium or outdoors may be given with profit. It should comprise something for all and not too difficult for any. Those who wish to practice, "at will," more difficult feats, may be allowed to do so. Then at certain intervals, to stimulate interest in the work regularly required, a field-day may be had. This should include only those exercises practiced by

all—running, jumping and military events. On these field-days the strictest discipline should prevail. While cheering may be allowed, the men must understand that this is a military event and not a country fair. Now, if the men themselves wish to have a field-day (and we will find this is seldom), in any form they please, just as they have a game of football or baseball, they may be allowed to do so and have as good a time as they can; but here no officers should officiate or be allowed to take part, except as spectators from a respectful distance, just as they often watch a game of baseball.

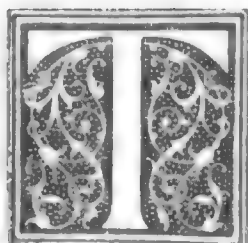
Some officers seem to think that a field-day in its present form is a training of their men. It is not. It is merely an expression of the physical condition of the best men of the command. Field-days should never be allowed, except as indicated above, and as a final wind-up of a certain period of training for a whole command.

The school boy, during his education at school and college, has had this athletic craze thoroughly instilled into his mind, and when he comes into the army it is natural that the effect of his education should be manifested in his ideas as a man. It is thus that the craze has attacked the army. There should be no such thing as a fad or craze in the army, and we should eliminate this one and confine ourselves, in the matter of athletics, to something reasonable and of unquestionable benefit to the service.



FIELD ARTILLERY FIRE.

BY CAPTAIN THOMAS RIDGWAY, ARTILLERY CORPS,
UNITED STATES ARMY.



HE rearming of the field-artillery with the rapid-fire piece, which we are promised by the Chief of Ordnance, will be complete by the last of October of the next year, has resulted in a change in the organization of the batteries, and will result in some radical changes in the manner of firing, in the kinds of fire and in the employment of artillery in action.

Incidentally, it may be noted that we, in common with all the powers except Russia that are putting the rapid-fire piece in service, are organizing the batteries with four pieces — Russia keeps to her eight-gun batteries. We have adopted eight as the number of caissons on a peace footing and twelve for war. The change in the number of pieces from six to four has been made for the following reasons: (1) the rapidity of fire of all six pieces could not be utilized; (2) the reduction in front insures better control in action; (3) economy of forces on a peace footing. The proper number of guns to an army corps is still an open question; in France the experts are discussing the relative merits of 144 or 120; in Germany General von Blume, an acknowledged authority, with a large following, is in favor of ninety-six, making no change in the number of batteries embodied in a corps, and thus obviating the manifest inconvenience of deploying such a mass of artillery.

The French are the pioneers in the matter of rapid-fire artillery, and have formulated firing regulations which, meeting at first with severe criticism on account of radical changes proposed which struck at the very roots of the principles of the old systems, have finally received the approval of artillery experts generally. Our Ordnance Department has made free use of French principles of construction in the new gun and its pointing apparatus, and it is understood that our methods of fire will be modeled upon the principles of the same school.

Rapidity of fire by construction is secured by:

1. Non-recoil carriage, allowing continuous sighting.
2. Movement of piece in azimuth without moving the trail.

3. Single motion, quick action breech mechanism.
4. Fixed ammunition, abolition of friction primers.
5. Firing device, lanyard remaining attached to piece.

The sights are attached to the cradle, and as this does not move on firing, the operation of sighting may be a continuous one, the gunner keeping the line of sight on the target or aiming point at all times; rapidity of fire thus depends on the time required for loading. Under the best conditions a rate of twenty shots per minute may be attained, in service it would probably be reduced to ten or twelve, possibly to eight. Elevation is given by a special quadrant with clinometer attachment to correct differences of level between piece and target; the range dial of the quadrant is graduated in meters, ours in yards. This leads to a subdivision of the laying, the gunner laying for direction, the operating number setting the quadrant at the designated range and bringing the bubble to the middle by the elevating hand-wheel.

A condition of rapidity of fire is an abundant supply of ammunition convenient to the pieces. This the French have secured in action by placing a caisson body one meter to the side of each piece; the first caisson body of the first reserve supply is on a flank and furnishes cover to the battery commander by whose side is the battery telescope; the second caisson body of the first reserve is fifteen meters behind the piece on the flank opposite the battery commander. All the personnel is sheltered behind gun shields or armored caissons, only a quartermaster's corporal, ten meters behind the battery commander, is completely exposed, and a bugler behind the corporal holding the captain's horse; all limbers drive away, only one horse remaining with the fighting line.

The object of the new firing regulations is to secure not the greatest possible fire effect in a given time, but to secure a sufficient effect in the shortest possible time, it being recognized as of more importance to economize time than ammunition; the commands and firings are so organized as to utilize rapidity of fire from the first ranging shots which are by salvo, and then opening against the objective with all possible rapidity, no time being lost by unnecessary commands for fuses, ranges or firing.

Next to rapidity of fire the most important characteristic of the new piece is its possibility of acting by surprise. In the endeavor to derive full value from these two characteristics the

new regulations contain radical changes in the principles of the administration of fire, both as regards ranging and firing at the objective.

Two methods of laying are prescribed, individual and collective: the first is the normal method of laying under the old regulations; the second is the normal method under the new.

Individual laying is used when the target is plainly visible and its flanks clearly defined, each gunner laying directly on the portion of the target assigned him, as would usually be the case in the decisive phases of action.

Collective laying involves the use of an auxiliary aiming point, the choice of which is limited only by the requirements that it must be plainly visible from the telescope and from each of the pieces and that it must be a conspicuous object not to be confounded with any similar object in the vicinity. Such an aiming point is useful, even in individual laying, in order that the pieces may be laid accurately on the target after the first shots, even though the target be obscured by the smoke of our own shrapnel; such a point would also be useful in obviating the difficulty of pointing out a target and subdividing it, a difficulty which at times becomes an impossibility.

Collective laying is used from concealed positions or when from the nature of the target it is not possible to divide it into sections and assign an objective to each piece. It is the normal manner of laying in the first stages of an engagement when it is possible to make all the necessary preparations without attracting the attention of the enemy.

Collective laying is made possible by the use of the collimateur, an optical sighting instrument permitting the choice of an aiming point anywhere on the horizon, and by its goniometer attachment graduated to milliemes, *i. e.*, 1-1000 of the range. In collective laying the elements of fire are the deflection allowance of a flank piece and the deflection difference. These two elements are calculated by the battery commander. Suppose the deflection difference is calculated for parallel fire: set the collimateur of each piece to read the deflection allowance increased or diminished by as many times the deflection difference as there are platoon fronts between it and the directing piece, the pieces being disposed with sixteen meters between axes, now traverse the pieces until the lines are on the aiming point.

With pieces so disposed the fire should be distributed over a front equal to that of the battery; whether it covers the front accurately depends on the correctness of the battery commanders' calculation. The four shots of a salvo should be evenly spaced, and if observation shows they are out, it is the duty of the chief of platoon to apply such corrections as will bring about that end. It is for the battery commander to order such correction as will cause the whole system to swing to right or left in order to cover the front of the target by parallel fires, or he may order corrections to close or open the fan, concentrating the fire by converging it on particular points or scattering it by divergence.

The fundamental principle in collective laying is the principle of deflection difference, and this in turn involves the idea of parallax which may be defined as the number of millimetres in a platoon front, supposed to be sixteen meters, as seen from the particular point; the calculation of the parallax then consists in dividing the platoon front by the number of thousands of yards in its range, the quotient being found to the nearest unit. In the calculation of the parallax of targets little difficulty will be met with, by reason of the slow changes in parallax at battle ranges, thus the parallax of all points between 2000 and 2650 yards is seven, with an error no greater than unity. It is in the calculation of the parallax of aiming points that the greatest error may creep in, but by using a range finder or a map, or when the distance to any point in the vicinity is known, it is found the errors can be kept within permissible limits. As may be seen, the principle of deflection difference enables us to find the parallax of an object when that of another is known, and knowing the parallax of an object its distance may readily be found.

Let us examine the theory of deflection difference.

Suppose two pieces with normal platoon front converge their fire on a particular point of the target; direct the collimators on the aiming point; it will be found now that the deflection reading of the second gun is equal to the deflection reading of the first increased by the excess, positive or negative, of the parallax of the aiming point over that of the target. Were there a third gun its deflection reading would be equal to the deflection reading of the first increased by twice the difference of parallax, and so on. In other words, the deflection differ-

ence between consecutive pieces so placed and converging their fire is constant. This is perfectly general for all positions of the aiming point, whether in front, on a flank of the line joining the sights, or in rear of the line of pieces, provided the angles are measured as the pointing apparatus is graduated, and that the parallax of the aiming point is negative for all positions in rear.

Suppose, instead of converging the fire, it is desired to dispose the pieces in parallel order so as to have them beat a front equal to the front of the battery, a normal condition of pitting one battery against another; here the lines of fire being parallel the parallax of the target becomes zero, and the deflecting difference is equal to the parallax of the aiming point. In case the aiming point is on the prolongation of the line of collimateurs, its parallax is zero, and the deflection difference for converging fire is negative and numerically equal to the parallax of the target. In case the aiming point is in rear of the line of collimateurs its parallax having passed through zero changes its sign, and the deflection difference for converging fire is then negative and numerically equal to the sum of the parallaxes of aiming point and target.

Another illustration of the use to which the principle of deflection differences lends itself is found in the case of a second battery taking position on the flank of a battery firing and opening on the same objective. It is not necessary for the commanding officer of the second battery to calculate the elements of fire. He orders the deflection allowance of his right piece from that of the battery firing, and the deflection difference for his right piece five times that used by the right piece of the first battery, because there would be normally five platoon fronts between corresponding pieces in the two batteries.

As stated above, ranging is normally by salvos or succession of shots fired with the same elevation in a determined order through the battery at the rate of one shot from each piece, the interval between successive shots being two or three seconds; Fire is opened by salvo at the estimated range and generally proceeds by jumps of 400 meters until a fork of half that depth is found to enclose the target. With a plainly visible target and good condition for observation the fork may be reduced to fifty meters, but this is exceptional. In some cases it may be possible to obtain the inferior limit only of the fork. If an enclosing salvo bursts, on striking, the correction is finished.

Verifying salvos are always required when the target is a material obstacle. They are not employed against troops at short range or when the last correcting salvo gives good range and direction. If the verifying salvo gives two or three shots over, that elevation is preserved for opening against the objective, otherwise the elevation is changed twenty-five meters and another verifying salvo fired.

Firing against the objective may be of the following natures:

1st. Progressive fire, consisting generally in the searching of a fork 200 meters deep, the initial elevation being 100 meters less than the inferior limit of the fork, each piece firing independently two rounds at each of four elevations varying by 100 meters, thus searching the 200 meter fork and two zones of 100 meters short and over in about forty seconds; when the front of the objective is such that the normal scattering of the fire will permit gaps in the objective, resort is had to a sweeping fire, each piece firing three rounds at each of four ranges with deflection differing by six mills, or three turns of the handwheel; for the first and third elevations of the series the sweeping is to the left, for the second and fourth the sweeping is to the right; thus in the progressive firing with sweeping each piece fires twelve rounds, this utilizes the utmost rapidity of which the pieces are capable. It may be noted that this nature of fire is essentially out of control of the battery commander who cannot from the independence of fire of each piece, observe the fall of projectiles for any particular piece, and is thus deprived of the power of correcting its fire at least during the particular series of forty-eight shots.

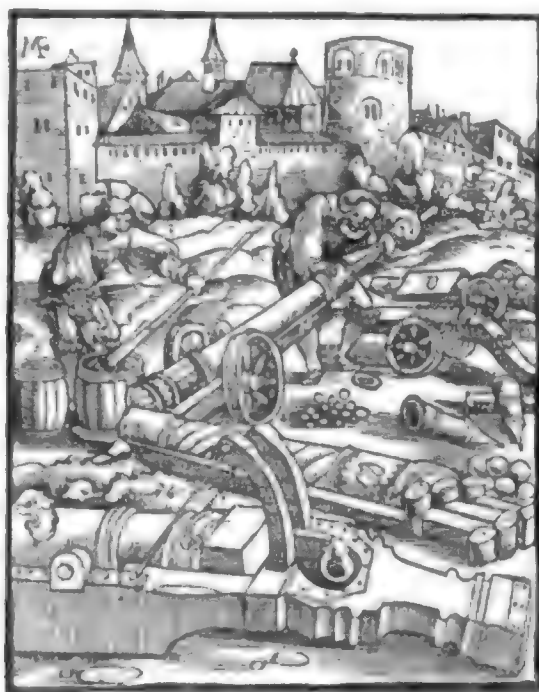
2d. Fire by *rafale* or by salvo at the command of the battery commander. Fire by salvo has already been defined and may be with or without sweeping. A *rafale* is a succession of shots from each piece without regard to order, fired with a single elevation and at a rate of two or three for each piece, depending on whether the firing is with or without sweeping, the successive elevations varying by one hundred or fifty meters at the option of the battery commander.

3d. Firing with a single sight elevation. This nature is used when the conditions for observation are good; it is used against material objects or bodies of troops that are hard to be shaken and against moving objects when the latter passes a point in which it has been possible to regulate the fire in advance. It gives the maximum effect with the minimum ex-

penditure of ammunition, but this is obtained at a sacrifice of time as the ranging has to be prolonged and the target enclosed in a shallow fork of fifty meters; the battery commander indicates in his command the number of rounds per piece; this nature admits of firing with or without sweeping and is independent of the order of the pieces in battery.

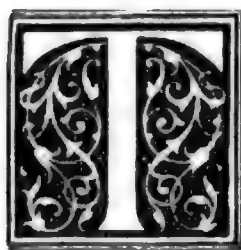
It is seen that of the different natures of fire, the salvo firing is the only one over which the battery commander maintains complete control in the administration of the fire of his battery, and with which he is able to apply the proper corrections as shown by the impact or burst of the projectile, an underlying principle under previous firing regulations.

Finally the French regulations recognize the principle of the economy of forces in action, prescribing that only enough batteries to accomplish the desired end be told off to open fire, while the remainder are posted in observation completing all preparation necessary to open fire in support of the pieces already in action or disposed so as to cover points on which an objective is likely to appear, obtaining the elements of fire of these points, and leaving nothing to be done in the way of preparation until fire is opened at the word of command.



THE TRAINING AND PERSONNEL OF VOLUNTEER TROOPS.

BY CAPTAIN GEORGE D. SNYDER,
LATE NATIONAL GUARD OF PENNSYLVANIA.



THE military policy of the United States may be said to be to make ready for war in time of war and not to do so in time of peace, as suggested by the Father of our Country. While it is true that we do make certain preparations in time of peace, they fall so far short of the complete preparations necessary to even commence a war with a second-rate power, that preparations for war in time of peace cannot be said to form part of the military policy of this country. The army we train and maintain in time of peace forms but a small part of the army we have always found necessary to create and train after the commencement of each war, and the officers we educate in time of peace are few compared to the officers we have found necessary to educate, or use without education, during a war.

As this has been the policy of this country in the past, and is likely to remain so in the future, we cannot rely on much greater preparations being made for the next war than have been made for the last, and the only thing to be done is to make such plans as we can to minimize the evils of this policy and to reduce the time necessary to make these preparations.

Recent wars have been short and sharp. The command of the sea may be decided shortly after the commencement, and this would mean for us that we could not make an adequate land defense in case our navy was defeated, or follow up our advantage in case of its victory, until we had improvised and trained an army.

In our next war we are likely to augment our Regular Army by volunteer forces as in the past, and the problem of how to make the most efficient fighting units possible in the shortest possible time out of the available personnel is well worthy of study.

This problem does not seem to have been satisfactorily

solved in the past, and our volunteers have generally received their training in the hard school of experience. With many of them their first shot has been one aimed at the enemy and their first long march one in the enemy's country.

The weak spot has been lack of careful individual training of the soldier. Our volunteer armies are mostly composed of infantry, and the essential qualities of an infantry soldier are practically the same to-day as in the time of Cæsar. Skill with weapons, ability to march and discipline will make an efficient infantry soldier now as then. The short sword has been replaced by the magazine rifle and the shield by the intrenching tool; but we have no modern invention to take the place of the bodily vigor and endurance necessary to carry a man through a long campaign, or that make unnecessary the discipline that can only be acquired by long training.

Although the use of volunteer troops in time of war has formed part of the military policy of the United States for generations, it is only recently that it has been authorized by legislation enacted in time of peace. Our new militia law* prescribes that all volunteer forces shall be organized as prescribed in the Act of April 22, 1898, which would require the organization in force during the Spanish War. This act also refers to units of the organized militia volunteering as a body, and evidently contemplates the appointment of the officers by the governors of the States, excepting in the case of United States Volunteers not accredited to any State.

Our new militia law is likely to work a vast improvement in our organized militia, but it is doubtful if its provisions will permit of much actual use of the militia as such in time of war, nevertheless it will be of great value as a training school for future volunteers. It can now be called into service for nine months, the idea being that in this time the volunteers can be organized and trained. As we have no reserve force from which to recruit the volunteers excepting the militia, it is likely that in organizing one force we will disorganize another, leaving us with no troops ready for immediate use excepting the Regular Army.

A study of our present law and our past policy makes it probable that our next war will be fought with armies composed of the following forces: 1. the Regular Army; 2, the organized militia; 3, the volunteers.

*Act of January 21, 1903.

The volunteers are likely to be of three kinds, (a) United States volunteers; (b) State volunteers composed of organized militia; and (c) State volunteers not composed of organized militia, and these will be found to differ largely in their characteristics and personnel.

The United States volunteers organized for use in the Philippines in 1899 were so unusually efficient that the statement has often since been made that State volunteers will not be used again, but as the only law we have ever had on this subject, in time of peace, contemplates the use of State volunteers this statement is hardly justified by the facts.

United States volunteers have certain essential differences from State volunteers, the principle one being in the manner of appointing the officers and in the number of the personnel with previous military training and the character and extent of this training. There are also marked differences in the attitude of enlisted men toward each other and toward their officers, due to freedom from local prejudices and jealousies and to the fact that the men have had no choice in the selection of their officers. Most of the field-officers are appointed from the Regular Army, the other officers being selected from those of more or less military training throughout the country, generally from former officers of the regular or volunteer forces, the organized militia and military colleges. It is to be regretted that political considerations play so large a part in the selection of these officers, for if they could be selected on merit in time of peace much better results would follow.

The United States volunteers organized in 1899 had a very large percentage of enlisted men with previous military experience, but it is not likely that this percentage can be equalled in the future, in a great war, if the organized militia are called out and if State volunteers are being organized at the same time. Some ex-soldiers of the Regular Army and some men with training in the militia can be counted on, but it is doubtful if more than enough men with previous training will be found to fill the quota of non-commissioned officers.

State volunteers composed of organized militia generally undergo such marked changes in personnel in changing from the militia to the volunteer service, as scarcely to warrant them being considered as the same organizations.

Most militia regiments in the past have consisted of eight or ten companies of fifty to sixty men, while the volunteer regiments are required to be of twelve companies of seventy-five to one hundred or more men; and as rarely over seventy-five per cent. of the strength of a militia regiment can be counted on to volunteer and pass the physical examination, each company of volunteers will scarcely have more than thirty-five to forty-five men with previous military experience. The officers are generally recommissioned in the volunteers without change, their appointment being due to their previous election as officers of the militia. This has the effect that the governor has no opportunity to appoint officers of the Regular Army even if he so desires, and if he has the opportunity and the desire he is limited by existing laws to one such officer to each regiment. The militia take with them all their local prejudices and factional feelings due to previous contests over the election of their officers. Nevertheless, some regiments have reached a considerable degree of efficiency, having a history and traditions, and under proper methods should develop very rapidly into efficient fighting units. Their principle defects are a lack of reliance on their officers, due to undue familiarity and to the election system of appointment, and a general disposition to consider their military service as a general lark or picnic on which they are to have as good a time as possible and do as little work as possible. This tendency may be remedied in part in the future by having the militia attend the army maneuvers instead of their State encampments with "Governor's Day" and the accompanying fuss and feathers.

State volunteers not composed of organized militia have generally the most to learn, and differ more largely in their characteristics in accordance with the military policy of the State from which they came and the conditions prevailing at the time of their organization. Such volunteers are generally organized because it is not the policy of the State to furnish its quota from the organized militia who volunteer as a body, because its quota is for more regiments than it has organizations of the militia, or because the organized militia has been exhausted in filling previous calls. The percentage of men with previous military experience varies greatly with the above conditions, but it is generally lower and poorer in quality than in the other kinds of volunteers. The officers

are either selected for political reasons, or the men are permitted to elect them; but regular officers are frequently appointed to such regiments, but this is not always a recognition of an officer's merit, but of his political friends.

In studying the probable efficiency of our volunteers at the beginning of a war the following facts should be borne in mind: first, that however efficient militia may be as militia, if it is not used as such, but is asked to volunteer, the results will be regiments partly disorganized with from fifty to seventy-five per cent. of new men to train and equip; second, that the superiority of United States volunteers is not due to the fact that their officers are appointed by the National instead of by the State government, or that such appointments are made without regard for political consideration for such is not the case, but this superiority is due to the fact that most of the field-officers are appointed from the Regular Army, that such troops have a greater percentage of former officers and men of the Regular Army and that whatever the defects of the method of appointing the officers it is an improvement over appointments based on a popular election by the men the officers will be called on to command.

The principal resources in the United States from which the personnel of our volunteer troops come are: first, former officers and men of the Regular Army; second, former officers and men of the volunteers; third, officers and men of the organized militia; fourth, the military colleges where instruction is given by officers of the Regular Army; fifth, the rifle clubs organized under recent legislation and sixth, the enthusiastic and patriotic young men without any military training whatever.

The officers and men of the Regular Army have had the most thorough and practical training and are likely to prove the most efficient, and it is strange that no greater encouragement is given to those from this class to return to the service. Former officers of honorable record have had great difficulty in having their services accepted, and being ignored at the War Department have gone from State to State in endeavoring to get an opportunity to serve. Considering the annual output of the Regular Army very few enlisted men volunteer in time of war. Although most of such enlisted men are competent to be non-commissioned officers, and many to be commissioned officers, the fact that they have

been trained in the Regular Army and are competent to fill such positions helps them but little in getting such appointments.

Our new militia law* provides for an examination whereby those with service in the regulars, volunteers or militia, and those educated at our military colleges can qualify for a commission as an officer of volunteers, but very few have thus far applied for this examination owing to the small inducements offered and the somewhat severe age limits prescribed for each rank.

An enlisted man of the Regular Army can also, under the provisions of paragraph 147 of the army regulations, have the notation made on his discharge that in the opinion of his commanding officer he is fitted to be an officer of United States volunteers; but this does not insure him being so commissioned. The above two measures are the first we have made toward utilizing the output of the Regular Army and securing a reserve list of officers in time of peace.

The former volunteers of one war have not been of much use to us in a succeeding one, owing to the lapse of time between the two and to the fact that they have devoted themselves to their civil pursuits and have not had an opportunity to keep in touch with military affairs. If, however, at the end of a war we would select the best of the volunteer officers and give them an opportunity to continue their military training, they would be of great service if war should come again in their time, and if not they would assist in handing down our military traditions and in training their successors.

The organized militia is our most valuable resource in organizing a volunteer army, as the officers and men from this class are the most numerous of those who have any training at all; their training, as far as it goes, is generally practical, and a large percentage of them can be relied on to volunteer. The officers are generally good drill-masters and in many States have devoted much time to rifle practice. Their weakness is a lack of knowledge of administration according to United States Army regulations and a lack of practical tactical training. We should not forget that the militia is the only reserve we have, that it is susceptible of great improvement at a slightly increased expense, and that its mem-

*Act of January 21, 1903.

bers devote much time and money to their military duties, standing ready to serve at any time and are therefore entitled to every consideration when volunteer appointments are being made.

Our military colleges, where instruction is given by officers of the Regular Army, have so far not proved a very valuable resource. This is not due to any defects in the character of the instruction, but largely to the fact that our government after providing the instruction fails to provide a means whereby the graduates from such institutions can round out and develop their military talents, or to place them on any better footing as regards appointment to a commission than those without such instruction. Comparatively few from this class become members of the organized militia, as they usually must enlist and trust to the election system for advancement, and similar conditions discourage them from enlisting in the volunteers. Unless some way is devised for availing ourselves of the military instruction these young men have received we would receive a better return for our money if we spent it in providing a better system of instruction for the National Guard.

The rifle clubs now being encouraged by recent legislation are another resource that are not likely to give a proper return for the money expended on them. To perform the duties of a modern infantryman against an organized enemy requires something more than the mere ability to shoot with accuracy. Before a man can make use of his skill as a rifleman in battle he must know how to live in the field under the conditions that exist in war, preserving his own health and not endangering that of his fellows, be able to transport himself and his equipment over long distances with his own legs, know his duties as a unit in the tactical organization of which he forms part, and how to present the minimum target to the enemy. In short, he must be a disciplined soldier, and the mere teaching of a man to shoot does not make such a soldier of him. We also have no means of knowing how many of the men we train to shoot in time of peace will come forward in time of war to receive the remainder of the training necessary to make soldiers of them. The great advantage in expending money in training men in the Regular Army and organized militia is that the training is all around, particularly in the former, and the men being trained

have entered into a contract to serve for a term of years, so that we receive the benefits of their training in case of a war occurring during this term and experience has shown that many of them return to the service in the event of war occurring after this term.

Our last and most numerous resource from which to recruit our volunteer armies is the great body of enthusiastic, patriotic young man without any military training whatever, coming from all parts of our country and from all walks of life. This is good raw material for the making of soldiers, but it will take time to turn out the finished product, and these young men will be very much disappointed if they are not allowed to grapple with the enemy at once, but are required to go through a course of training preparatory thereto.

The size of the volunteer armies we are to raise in the future is likely to vary between 30,000 in case of an insurrection in our insular possessions or war with a minor South or Central American Republic and 1,000,000 men in case of an attack by a world power. In other words we may be called on to increase our army from one-half to ten or fifteen times its normal strength. Almost any war we are likely to get involved in will require at least 500,000 men and plans should be made for training at least this number.

Our problem is very largely affected by the kind of volunteers we organize and by the number we call for at any one time. In the past an attempt has been made to estimate the number of men required at the beginning of a war and to call for this number. This has generally resulted in an underestimate and has been followed by additional calls for troops at irregular intervals, as many as half a million men having been asked for at one time. To provide for the muster, subsistence, clothing, arming, equipping, training and appointment of officers for such a large number of troops at once is a difficult task for an administrative staff organized to provide for our small peace-time army only, to handle, as well as being a heavy strain on our resources. As it is very difficult to estimate in advance the number of troops that will be required, it would seem to be preferable to ask at the beginning of a war for no more troops than can be properly equipped and trained with the resources immediately available, and having provided an organization for the train-

ing and supply of this number, to ask for a certain number of men each month until it was evident that no further troops will be needed. This would enable the supply and training to keep pace with the recruiting and would furnish a steady stream of recruits to make good the losses in the regiments already in the field, and the expansion of the army would be gradual by the addition of new regiments at regular intervals of time. This method would be sure to give better results than the asking for such great numbers of troops at a time that proper care cannot be taken in their muster, the selection of their officers and their training and equipment, to be followed by an interval when we refuse to accept the services of those who volunteer and then to be followed later by the offering of large bounties for men to enlist. This method has a further advantage in case of a long war in that the term of enlistment of large numbers of men would not expire at one time.

If we are still to ask for State volunteers, the relative number of State and United States troops should be determined in advance. If at the beginning of a war we apportion among the States a call for a number of volunteers, based on the number of organizations in the organized militia at full strength, this will practically exhaust the available military personnel of the States and this should be the maximum number of State volunteers accepted. The number of United States volunteers organized at first should be the number of units necessary to give the armies to be placed in the field the proper proportion of the several arms, and as the State volunteers will be mostly infantry, the first United States volunteers would largely be cavalry, field-artillery and special troops such as engineers, signal and hospital troops. Troops organized thereafter should all be United States volunteers, which would place their recruitment, organization, training and the appointment of their officers all under a central authority. This would prevent the Regular Army, United States and State volunteers from entering into competition for recruits, and would insure a certain number of officers in each regiment being from the Regular Army or from the volunteers who had already proved their ability in the field.

All the defects that have manifested themselves in our past methods of training volunteers are evidently due to the fact that a carefully thought-out method of doing this

work has not been worked out in time of peace. Our volunteer troops have generally been assembled in great camps shortly after their muster-in, which were supposed to be camps of instruction, but these camps have had no special organization or equipment for this purpose.

The organization has been merely that of an army corps or division with an administrative staff only and no special staff of instructors, and the few officers competent to act as instructors have been too much overburdened with administrative work to do so. The great majority of volunteer troops that entered the service during the Spanish War left the same without any training in rifle practice whatever without increasing their marching power or any thorough training in battle exercises or in the service of security and information, and in many cases those regiments that had been in the organized militia were in a poorer state of discipline than before they entered the service.

As regards size it would seem that these camps should be small if we had sufficient officers to supervise the instruction, but as the number of officers that can be detailed to this duty is small we cannot have many such camps, so of necessity they must be large. To give them capacity for training about 30,000 infantry, or about enough for an army corps, would likely be the best arrangement under the circumstances.

To find locations satisfactory in all respects will prove difficult. That they should be the most healthy obtainable goes without saying. They should be well drained, with a water supply above suspicion, along a stream or lake to admit of bathing, with good railway communications, diversified topography, abundant facilities for rifle practice, and if not of sufficient size to admit of long marches, there should be secondary camps at about ten, twenty and thirty miles from the main one on which to bivouac.

Each such camp should have a staff of instructors separate from the administrative staff. There should be a general officer of high rank in command with a chief of staff and two assistant chiefs of staff, one in charge of the administrative staff and the other in charge of the staff of instructors. The number of instructors will necessarily be limited and in a camp of this size it will be impossible for this limited number to actually give instructions themselves but there should be

a sufficient number to carefully supervise the instruction, inspect the work done and give lectures and general instruction to the officers.

The troops should not be organized into larger units than regiments, excepting for administrative purposes, until the individual instruction has progressed far enough for the officers and men to intelligently perform their duties in brigade and division exercises.

The instruction should naturally be divided into the general instruction that should be given to all and the special instruction to be given to officers and men with special duties to perform. This for infantry would mean that all should be taught to shoot, to march, to drill and be disciplined, while staff-sergeants, cooks, etc., should receive instruction in their special duties. Likewise all officers should have a knowledge of the above, of administration and receive a certain amount of tactical training, while company officers should receive special instruction in company administration, regimental staff-officers in staff administration, and field-officers in the administration and tactical use of larger units.

The prevalent idea in instruction for officers in the military schools in our army is to treat all alike, giving a broad and thorough training to all and not to encourage officers to specialize. In view of the great differences that exist in the extent of the military experience and previous education of officers of volunteers this is not applicable, and they should be encouraged to specialize, and those having acquired a special knowledge in any subject in civil life should be given opportunities to learn the military application of their trade or profession.

Considering the many things that our volunteers have to learn they should be kept at these camps as long as possible and no time should be wasted, but as our military emergencies may compel us to make use of these troops, no matter how short their training has been, an endeavor should be made to teach a few essentials as soon as possible. It is doubtful if much of value can be learned in less than three months, and as circumstances are not likely to permit us to devote more time than this on the first troops a minimum course of twelve weeks is suggested. To endeavor to make use of troops with less training than this is likely to invite disaster.

The slow progress made by our volunteer troops in acquiring their military instruction in the past has largely been due to the following: first, a lack of competent instructors; second, a lack of a prescribed course of training; and third, a lack of a strong incentive for both officers and men to acquire this military training. The following course of training for infantry is merely a suggestion as giving a rough outline of the ground to be covered. Methods of obtaining a greater number of competent instructors and of creating stronger incentives to acquiring military proficiency will be discussed hereafter. Such a course should be planned so as to exercise the soldiers in duties as similar as possible to those they will be called on to perform in campaign, and in so doing to endeavor as far as possible to have them acquire the habits of discipline and to gradually harden and toughen them physically so that they will be better able to stand the bodily strain of warfare. In order to make satisfactory progress each day should have its allotted task, and commanding officers should be held to a rigid accountability for the progress and efficiency of their commands. To ascertain the relative progress and secure uniformity, Saturdays should be devoted to an inspection and review of the week's work. The suggested course of training is as follows:

FIRST WEEK.

Careful inspection of each organization on its arrival at camp, to ascertain extent of equipment, number of officers and men with previous training, and extent of such training, physical condition and knowledge of camp sanitation, instruction of officers in standing orders of camp, character of course of training with lectures on general principles of close and extended order drill and guard duty.

SECOND WEEK.

Drill.—Company in close order, squad in extended order, setting-up drill.

Rifle-Practice.—Nomenclature, care and cleaning, tripod-sighting drills, and individual range firing by men with previous experience.

Marching.—Two five-mile marches by company with partial equipment.

Officers.—Instruction in camp sanitation, military correspondence, returns, reports muster, and payrolls.

Instruction of cooks in use of field rations.

THIRD WEEK.

Drill.—Battalion in close order, company in extended order, bayonet exercises.

Rifle-Practice.—Position and aiming drills, gallery practice. Selection of coaches from experienced men.

Marching.—One five-mile march and one eight-mile march by battalion with full equipment, company acting as advance and rear-guard.

Officers.—Instruction in company as advance and rear-guard and on outpost duty, map reading, conventional signs, property accountability, instruction of men in individual use of field rations.

FOURTH WEEK

Drill.—Regiment in close order, battalion in extended order, outpost duty

Rifle-Practice.—Estimating distance drills. Individual range firing, 200 and 300 yards.

Marching.—One ten-mile march and one twelve-mile march by regiment, battalion acting as advance and rear-guard.

Officers.—Quartermaster's supplies, clothing accounts, battalion in advance and rear-guard and on outpost duty, map reading, scales, hasty intrenchments.

FIFTH WEEK.

Drill.—Regiment in extended order, outpost duty.

Rifle-Practice.—Individual range firing, 500 and 600 yards, skirmish firing.

Marching.—By regiment a twelve-mile march, bivouac and return next day; hasty intrenchments, construction of lying and kneeling trenches.

Officers.—Subsistence supplies, regiment in advance and rear-guard and on outpost duty, map reading, orientation.

SIXTH WEEK

(Regiments to be brigaded.)

Drill.—Brigade in close order, outpost duty.

Rifle-Practice.—Completion of marksmans' course, instruction practice and commencement of record practice.

Marching.—By brigade a fifteen-mile march and return next day, regiments acting alternately as convoy.

Hasty Intrenchment.—Construction of standing trenches.

Officers.—Minor tactics, the infantry attack, summary courts, road sketching.

SEVENTH WEEK.

Drill.—Brigade in battle exercises, night attack in close order.

Rifle-Practice.—Continuing instruction and record practice marksmans' course, sharpshooters' course for advanced men.

Marching.—By brigade a twenty-mile march and return.

Officers.—Minor tactics, flanking attacks, regimental and garrison courts, reconnaissance.

EIGHTH WEEK.

Drill.—Brigade acting with other arms, advance and rear-guard action.

Rifle-Practice.—Marksmans' and sharpshooters' course, company volley firing.

Marching.—By brigade, a night march of twenty miles and return on second day.

Officers.—Minor tactics, night attacks, general courtmartial.

NINTH WEEK.

(Brigades assigned to division.)

Drill.—Division in battle exercises.*Rifle-Practice.*—Marksmans' and sharpshooters' course and expert riflemen's test.*Marching.*—A forced march of twenty-five miles.*Officers.*—Minor tactics, infantry supporting artillery. Martial law.

TENTH WEEK.

Drill.—Division in battle exercises, acting with other arms.*Rifle-Practice.*—Same as ninth week.*Marching.*—By division a twenty-mile march, construct kneeling trenches, bivouac and return next day.*Officers.*—Infantry and cavalry acting together, law of hostile occupation.

ELEVENTH WEEK.

Drill.—Division maneuvering against a represented or outlined enemy.*Rifle-Practice.*—Same as ninth week.*Marching.*—A forced march of thirty miles.*Officers.*—The three arms combined, the law of war.

TWELFTH WEEK

General inspection of troops in course of training, certifying of regiments as competent to take the field. Transfer of officers and men to recruit camps, who are not up to the standard of efficiency. Discharge of those who have developed physical or other defects that make it evident that it will not be profitable to return them.

Similar courses can readily be devised for the other arms of the service.

It is to be hoped that before our country is again involved in war that we will have so changed our military policy as to make the training of troops in time of war unnecessary; but as this is not likely to be brought about in the near future, as a common-sense people we should enact such legislation as will enable us to do this work as quickly and as efficiently as possible. We should therefore endeavor to obtain legislation authorizing the purchase and equipment of the necessary camp sites, providing for the necessary instructors and for the greater encouragement of military study in time of peace, and placing a greater value on military ability by giving the preference to it in making appointments in time of war.

Our best instructors are unquestionably the officers of the Regular Army, and by appointing such to higher rank

in the volunteer regiments we not only get the benefit of their skill as instructors, but as commanders, as well, after the period of instruction is past. There is a limit, however, to the number of such officers available for this duty on account of the large numbers of details that must be made for other purposes in time of war. In war time our regular regiments have more men and less officers with the colors than in time of peace, and yet this is the very time they should have a full complement.

At present we have no fixed method of selecting the officers to be appointed to the volunteers. Those so appointed have the benefits of increased rank and pay while their brother officers remaining with the regiment have none of these benefits and an increased amount of work. It would therefore be fairer to all concerned if a plan were adopted for appointing the officers to the volunteers by selection or seniority, and giving temporary increased rank to those remaining with their regiment who are exercising higher command, and then to give the regiment a full complement of officers by making volunteer appointments to the subaltern grades from a class to be trained for this purpose in time of peace, and by appointments from the ranks.

If this plan were adopted a much greater number of regular officers could be gradually appointed to the volunteers as those with temporary rank gradually acquired experience.

Another step to add to the number of instructors would be to give greater inducements to former regular soldiers to enlist in the volunteers. This can best be done by recognizing the fact that soldiering is a trade and that those who served a term of years in learning it are worth much more than an untrained apprentice and that their wartime pay should be at least twice the ordinary peace rates.

In order to get the best results in such a course of instruction strong inducements should be offered to both officers and men to acquire as much proficiency as possible. To this end officers who have not passed a qualifying examination in time of peace should not be given their commissions until they have completed this course of training and passed a satisfactory examination. If State volunteers are authorized, the governor's appointment of officers should be subject to the same conditions.

Enlisted men should be classified as regards pay accord-

ing to their previous experience. Those with no previous training should only receive the ordinary peace time pay of their rank, and upon proving their ability to shoot, to march, to perform the many other duties of a soldier in the field, and upon having a clear record in regard to discipline they should receive the same rate of pay as a trained soldier from the Regular Army.

We all know that if we postpone the training of our soldiers until war has commenced that the work will not be as well or as thoroughly done as in time of peace, that it will require more men to accomplish a given end and that it will cost us more both during and after a war, but as this is the established policy of the country, all we can do is to make such plans as we can to minimize its evils, trusting that a kind providence will bring us safely out of our difficulties in spite of the military maxim that the Lord is on the side of the heaviest, and presumably the best-trained, battalions.

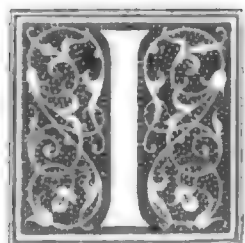


THE INDIVIDUAL INSTRUCTION OF THE SHOT AND THE EDUCATION OF THE NERVOUS SYSTEM.

BY CAPTAIN LEON MOREAUX, SUPERINTENDENT OF THE RENNES
SCHOOL OF SHOOTING, AND DR. GRUET, MAJOR AND SURGEON
(In the "*Journal des Sciences, Militaires*," March, 1905.)

TRANSLATED BY CAPTAIN HERSCHEL TUPES, FIRST INFANTRY.
FOR THE GENERAL STAFF, U. S. ARMY.

PRELIMINARIES.



INDIVIDUAL instruction is the basis of all small arms practice.

But differences of opinion arise when the surest and quickest method of training a good shot is to be determined.

It appears to us that psycho-physiology must supply the interesting elements in the solution of the problem.

The most ordinary individual soon succeeds in assuming a correct position for firing, in holding his piece properly and in aiming correctly. But most often the pupil obtains results of only little satisfaction in carrying on his target-practice according to the preparatory exercises and the usual theoretical instruction that he has received; he soon becomes discouraged, and he thereafter considers shooting as a disagreeable drudgery. Is not this the history of a large number of pupils, especially of young soldiers, and even of some officers?

We believe that it is possible to avoid these painful beginnings, that it is possible to make the firing attractive and to make good shots of all the men. We are demonstrating the proof of this assertion almost daily at the School of Shooting at Rennes with men of all conditions and ages. We have convinced the most prejudiced of minds, and even the incredulous have become apostles and propagators of the method. This latter is based entirely upon *the education of the nervous system*.

However simple this idea may be, it does not seem to have

been brought out up to the present in instructions in target-practice.

If the pupil shoots poorly it is not, generally, because he takes a faulty position; it is not because he holds his piece improperly; it is not because he takes poor aim; it is not, as some freely assert, because the movement of the trigger finger is transmitted to the shoulder. In aiming, particularly, the oscillations of the piece are not usually so extended that they can of themselves prevent the projectiles attaining the target. This is an important point to consider, for the majority of riflemen attribute their lack of success and their inaptitude in shooting to the tremor of the hand. This is an important idea which it is important to eradicate.

If, in place of a discouraging check, the first lesson leaves the beginner with the impression, based upon good results, that he is well qualified for shooting, he will await with impatience the occasion for the next practice and he will acquire the confidence which success and gratified pride produce when gained by perseverance.

PRACTICAL STATEMENT OF THE METHOD.

Rifle-Practice.—We will take rifle firing first in order that the exposition of the method may be facilitated.

The instructor places the pupil in front of a target 200 yards distant, the target measuring one meter in diameter and being divided into two zones (the military target) and satisfies himself that the pupil knows how to take the line of sight correctly. For reasons which we will point out later the first lesson must be given in the prone position. The instructor loads the piece himself. In the breech he places a dummy cartridge having the appearance of a ball cartridge, and gives the following directions:

“You will exert a gradual and continuous pressure upon the trigger; this pressure will be progressive as long as the piece continues well aimed. When the line of sight ceases to be directed upon the point aimed at, your finger will maintain the pressure acquired without increasing it; the progressive movement of the trigger will be resumed only when you will, after a few endeavors, have the correct pointing of the piece in hand.”

“In no case will you be preoccupied about provoking the escapement of the trigger for the purpose of firing the piece,

which must be fired unwittingly, so to speak, and which must be considered as an incident in the course of your work."

In spite of these directions a jerking movement of the body quite often accompanies the pressure on the trigger, the entire body has shared in the movement and the bullet would have gone in almost any direction if the piece had been loaded. The pupil is aware that he has made a jerking movement, which is not confined to the finger, but is only a participation in a general movement of the body and which, for this reason, is improperly called a "*coup de doigt*." The instructor draws the attention of the other pupils to the error, they have themselves noticed the error and they have prepared themselves in advance to react against the impulse of their nervous systems. When they shall take the lesson in their turn the ease with which they will acquire the correct trigger pressure will depend upon how well they will have observed the mistakes of the others. The trial is repeated as often as the conditions require. By degrees the rifleman masters the displacements of the piece which he has caused. After a series of trials, at least ten, varied according to the subject, he finally entirely suppresses the jerking movement which displaces the piece when the trigger is pulled. At this moment a ball cartridge is placed in the piece in the same manner as the dummy cartridges. The pupil believing that he is to continue firing dummies exerts the correct pressure upon the trigger, the piece is fired, the bullet is well placed; it is generally a center. This result, which obtains at least nine times out of ten, causes the rifleman to be agreeably surprised. This excellent impression must remain with him. The first lesson is ended.

The instructor directs the pupil to practice the firing from time to time, cautioning him to aim correctly and to apply the precepts which have just been given him; he advises him to ponder upon all the phases of the lesson, upon all the instructions that have permitted him to attain this happy result.

If, instead of dealing with an ordinary subject, we have to instruct a very nervous man or one of but little intelligence, if we ascertain that he does not exert the pressure upon the trigger in the manner required, we will have him quit his piece without firing a loaded cartridge. We now interrupt the drill for a few minutes. Rest calms the ex-

citement of the nerves. We give new explanations to those who appear not to have understood the theory of the pressure of the trigger finger upon the trigger by causing them to follow the following demonstration. We place the pupil in the standing position and say to him: "Let us suppose for an instant your body represents the trigger; we are going to press gradually against that trigger while we will suppose you to be placed on the prolongation of a certain line; we will maintain the pressure but without increasing it as often as your body shall depart from this line; when you shall again be placed upon the prolongation of this line we will increase the pressure until you lose your equilibrium. The loss of equilibrium in these cases represents the escapement of the trigger when you exert pressure upon it according to the principles just described."

This somewhat rude demonstration is better for some intellects than the clearest of explanations for it renders a better account of what a difference there is between the successive pressures exerted upon the body of the man (or the trigger) up to the loss of equilibrium (the escapement) and the sudden pressure or jerk by which he would have been able to have provoked the fall, or the escapement of the trigger.

There are other useful means. Sometimes we employ the following:

The pupil aims, the right hand grasping the small of the stock without placing the finger upon the trigger. The instructor makes sure that the line of sight is well taken, and that the piece no longer oscillates appreciably. At this moment he presses the trigger himself and determines the moment for firing the shot unknown to the rifleman, and the bullet is again well placed. With a little practice it is easy to discover the instant when the line of sight is well taken, without having recourse to the pointing mirror.

It is important that the pupil be drilled with a piece so adapted as to increase the chances of his obtaining good results immediately. It is necessary that he be impressed that he is naturally a good shot; whence the necessity for placing him in the best way possible for attaining this end. Another not less important recommendation is that

all lessons must be of short duration. Physical fatigue or mental weariness must be guarded against.

The succeeding lessons are given in the same manner, that is by using empty cartridges at first and then loaded ones. The instructor loads the piece with a ball cartridge every time that he judges the chances are that the rifleman will exert a correct pressure upon the trigger. He afterwards decreases the number of dummy cartridges, increasing by a like number the loaded ones, according to the more or less rapid progress of the pupils.

Revolver Practice.—The instructor places the young shot before a target, five meters distant, which is thirty centimeters in diameter and is divided into two zones. He ostensibly loads the revolver with dummy cartridges. As in rifle firing, he directs the pupil to think exclusively of exerting a pressure upon the trigger while the arm is correctly pointed; to maintain the pressure without increasing it when the line of sight deviates from the point aimed at, to not be concerned at any moment about the possible escapement of the trigger; the whole body has participated in this movement and the shot would have been bad had the revolver been loaded. The exercise is repeated until the man becomes indifferent about the escapement of the trigger, leaving him always unaware if the cartridge be loaded or not. This point is important, because it is in the exercises with dummy cartridges that the pupil most easily perceives his mistakes and by the use of his will prevents the jerking movement which causes the deviation of the arm. By degrees the amplitude of the movement decreases until it becomes nothing. At this moment the instructor cocks the mechanism upon a loaded cartridge, unknown to the man firing, who continues the exercise without being impressed by the possible discharge. The shot is fired and nine times out of ten, as in rifle firing, the shot is well placed. As with the rifle, the lesson must terminate with a good result. The pupil will all the more willingly reflect upon the different features of the lesson the more that he is astonished at the success of his shooting. The succeeding lessons are given in the same way, that is, by using dummy cartridges, then ball cartridges varying in number according to the more or less rapid progress of

the shot. The results must invariably be good unless the instructor be at fault.

At the beginning care will be taken not to fire several ball cartridges consecutively, because the projection of the ball and the noise of the discharge result in exciting the nervous system of the new shot. The progress of the instruction should be more or less rapid, and it is left to the instructor to determine from his own observation and judgment the moment the pupil is in a state to practice with ball cartridges exclusively. In ordinary cases, with subjects of average ability, three or four exercises are sufficient to obtain a satisfactory result, that is, to place all the bullets within a circle of five centimeters radius from a distance of fifteen meters.

This result having been obtained with a gallery pistol, the target is placed at the twenty-meter range, and as soon as the pupil succeeds in placing a series of six shoots within the circle just described, the instructor begins with the service revolver. The target is again placed at fifteen meters, then at twenty meters, and in two or three drills the pupil succeeds in placing all the shots in a target fifteen centimeters in diameter and can be considered a good pistol shot.

Experience has shown us that the progress is much more rapid if they use an accurate gallery pistol than if they begin at once with a service revolver.

BASIS OF THE METHOD.

The method which we advocate is supported by hundreds of experiences which are renewed almost daily at the shooting school at Rennes. A practice which gives such uniform results, borne out by the success of the pupils of the Rennes school at national and international competitions, must have a solid foundation and rest upon a principle that is important to be set forth.

The poor shooting of the pupil is not generally due, as we have said, to incorrect aiming nor to the tremor of the hand while aiming; the new shot very quickly succeeds in aiming well and in minimizing the amplitude of the oscillations.

If you observe the inexperienced man as he presses the trigger to fire his piece you will notice a sudden, jerking, con-

vulsive movement, not only of the finger, but of the entire body. What is the nature of this movement and what is its cause? It is classed as a "reflex" movement. We are now obliged to make an incursion into the domain of physiology.

A reflex is a responsive movement determined by the excitation of a peripheric nerve. Sneezing is a reflex; the movement of the head and shoulders caused by the firing of a cannon is a reflex. In those movements the spinal marrow is the reflex center. The peripheral excitation is transmitted to the cells of the marrow which reacts by a motive excitation. The higher nervous centers exercise a governing action over the medullary centers; they diminish the excitability of the spinal marrow, and consequently, the reflex movements. The will, the seat of which is in the higher nervous centers, can of itself prevent certain reflex movements, such as coughing and sneezing.

In the particular case which concerns us what is the provoking cause of the reflex which leads to the displacement of the arm and of the entire body?

In the first place, there is the phenomenon of auto-suggestion united to the thought of the detonation and of the recoil of the piece. A good proof of this is that the pupil suppresses the reflex when he is to fire, or believes he is to fire, with a dummy cartridge, but that it will reappear when he knows that he is to fire with ball cartridges. So let us caution the pupil to not think of the discharge, but to think solely of exerting a pressure upon the trigger in the manner indicated above. In this way the discharge takes place without the momentary volition of the shot; when this is so it is quite certain that the bullet is well placed in the central zone.

Lastly, if the man intentionally exerts a sudden pressure upon the trigger this method of procedure favors the production of the reflex. In fact, it is demonstrated that the abruptness and suddenness of the peripheral excitation promotes this same effect.

Physiology teaches us, besides, that the reflex movements are subjected to certain laws. They first irradiate transversely (law of symmetry), then longitudinally in the homologous parts; in the end they are generalized when the excitation is intense and very sudden. These laws explain the movements that we have noticed in the superior members and in the whole body of the new shot. In practically no case can it happen

that the movement of the trigger finger will be transmitted directly to the shoulder. We have the proof of it in this fact, that the shoulder and the whole body remain motionless when the pupil believes that he is using empty cartridges. The movement which causes the discharge evokes an idea of detonation and of the recoil of the weapon, and this idea causes a reflex movement.

In this drill, as in all others, habit leads to automatism, which is the object of the practice. In order to attain it rapidly, one must divert the pupil's attention from the idea which causes the mistake to be avoided. This idea is *the intention of discharging the weapon*. It is necessary to convince him that he must think exclusively of exerting a gradual and sustained pressure upon the trigger, that he must concentrate his whole attention upon this point without being preoccupied about the discharge of the weapon. All the instruction must be given with this object in view.

THE RÔLE OF FATIGUE.

We have pointed out the benefit of short lessons. We will now discuss the point which, in our opinion, is of the chief importance.

The effect of fatigue has been discussed and variously interpreted on occasions of rifle matches preceded by more or less extended marches. For our own part, we have had occasion to note the result of an experience of this kind.

Twenty soldiers were required to practice after having made a march of fifteen kilometers. The rate of marching was very rapid. The occasion was an eliminative test in long distance marching, organized by the periodical *Le Matin*. At the end of the march the soldiers were wet with perspiration, and including the time necessary to change clothing, we had to commence firing only one-half hour after arrival. The general results of the practice under these conditions were very satisfactory. But it must be stated that it took place with men already trained in shooting and marching. The one conclusion to be drawn from these facts is that with well-trained men general fatigue has no adverse influence upon the aptness in firing provided it does not exceed a certain limit. In fact, we know that moderate fatigue tones up the nervous system.

Upon the other hand, excessive fatigue has an enervating and depressing effect, for it favors the development of the

reflex movements. In order to better comprehend the influence of fatigue upon the production of these movements, we will borrow a few pathological examples. If, for instance, we consider epilepsy, which is a malady that appears to be the extreme of reflex, we see that a wise method of training delays the convulsive attacks, while the abuse of physical exercise increases their frequency. The muscular contraction is the result of pressing fatigue to the extreme limit. The common idea extends only to the belief that the greater the fatigue the more must the will be called upon to suppress the momentary contracture.

Now, as we see that the reflex movements are the usual cause of the beginner's poor shooting, we must make him use his will to suppress these movements, and the conclusion to be derived is; one must avoid fatiguing the pupil.

We but mention the need of training the man in raising and holding the piece at the shoulder, a training of which the usefulness is recognized by all. But besides this very manifest cause of lassitude, there are others that cannot escape the attention of the instructor. In the first place, there is psychical fatigue due to the lesson being prolonged, and there is the emotional fatigue due to the fear of the recoil, the remarks of the instructor, the comments of spectators, etc. Indeed, any prolonged or violent sensorial excitement causes fatigue. The instructor must note these and many others, such as external heat, excessive thirst, etc., which enervate even trained shots. The instructor must, therefore, allow frequent rests, give short lessons, attaching less importance to the duration of the drills than to the state of the nervous system of the pupil.

EDUCATION OF THE SENSE OF SIGHT.

Good long-distance vision is required in the use of modern weapons.

Now, in order to have a clear perception of distant objects, it is not sufficient that the eye be of normal conformation; it is a thing which has to be learned. Sailors and signal men along the coast, whose range of vision is considerable, have acquired this quality by practice, by an unconsciously attained education. In most of the other professions we seldom use our eyes except for close vision, for we are not accustomed to discern distant objects. But it is possible to increase the visual acuteness of not only those men whose eyes are normal, but of those

attacked by myopia, hypermetropia, and astigmatism to a slight degree.

If the functional inactivity leads rapidly toward the loss of vision, regular exercise is not slow in restoring it. In strabismus, for example, the squinting eye, which generally ceases to be useful, loses its visual power by degrees, but it rapidly recovers if the functions of the other eye are suppressed.

In saying that the eye loses its visual powers, we employ an expression which may cause confusion regarding the mechanical phenomenon of vision. The eye having undergone no alteration in its structure, it is necessary, in order that sight be destroyed, that the visual cells of the brain be in a state of functional inactivity, for it is the brain that sees, elaborating within itself the luminous impressions transmitted to it by the retina and the optic nerve. These latter are only receiving and transmitting organs; the interpretation of the impression—that is to say the perception, devolves upon the brain. It is consequently the education of the nerve-cells that have to be accomplished. The instructor must be well impressed with the fact that in the matter of vision the mind has a task to perform, and that it is necessary to increase the visual intelligence if one may so express one's self (Trinaud).

It does not enter into the purpose of this article to point out the details of the methods to be employed to attain this end. We will limit ourselves to pointing out the usefulness of devoting a large part of the preparatory instruction to the eye, of carrying on the practice in the beginning as much as possible in clear weather, which increases and sometimes doubles the visibility of objects, the purpose being to always surround the young rifleman with the best conditions in order to obtain good results.

POSITION OF THE SHOT.

We have advised placing the beginner in the prone position. This position presents two advantages; it causes the minimum of fatigue; it gives the maximum of precision.

The first advantage is manifest and is not a negligible quantity. The second is the result of several factors. The displacements, whether caused by the recoil of the piece, by the reflexes or by the ordinary oscillations of the body are less than in any other position. The piece being held firmly against the shoulder and supported by both hands with the elbows resting

on a fixed plane, describes only small oscillations, permitting the pupil to quickly direct the line of sight. It is important to suggest to him that he hold the piece firmly, without stiffness and without employing too much effort in assuming this position. When the pupil is able to place two-thirds of the shots within the central zone he takes the kneeling position, the right foot being placed either in flexion or extension at the will of the rifleman. The position is fatiguing, a long suppling being necessary to make it tolerable for any length of time; it is well to allow the rifleman to take both methods and to rest the weight of his body on the heel. The kneeling position offers the greatest rapidity of fire.

When three-fourths of the bullets are placed within the central zone, the instruction is continued in the position of firing standing. This is the most fatiguing position, and the one which requires the longest training, as much for the easy support of the weight of the piece as for diminishing the amplitude of the movements of the arm and of the body; for these reasons it should be taken last.

In revolver firing we allow the beginner the liberty of holding the weapon at will, of placing the arm and the forearm in the position most suitable for him. Generally the young shot holds the arm in a more or less flexed position, for it appears to him to give less fatigue and permits him the more easily to decrease the unsteadiness of the weapon. Another reason which he often unconsciously obeys, in determining the choice of position for the superior member, is the necessity for adapting the eye so as to clearly distinguish three points; the sight notch, the front sight and the point aimed at. Now, the distance at which the weapon must be held in order to attain this result varies according to the conformation of the eye and its adaptive ability. The pupil determines this distance instinctively; every liberty must be allowed him in this regard. When the results obtained under these conditions are satisfactory, it is well to accustom the pupil in the classic position which permits the maximum of precision being attained. In this position the forearm is held nearly straight, and the butt of the revolver is held in such a manner that the axis of the hand and of the forearm will be as nearly as possible in prolongation of the line of the arm. This last position is taken as soon as the arm is sufficiently supple that the weapon can be held for some moments without fatigue.

It is on account of the need for this preliminary suppling that we do not compel the pupil to take this position at the outset.

CONCLUSIONS.

The method which we extol has the sanction of long experience. It has several advantages over the methods commonly practiced.

It permits the quick training of shots. For the beginner it avoids the discouragements so prejudicial to his instruction. There is born and developed in him the liking for small arms' practice, because it gives him confidence in his skill and in his weapon.

But in order to obtain such results the instructor must have absolute confidence in the efficiency of the method, confidence which he can acquire only by personal and assiduous practice. Under these conditions he will cause his pupils to share his faith and brilliant success will crown his efforts.

TRANSLATOR'S COMMENTS.

The methods outlined above, so far as they apply to rifle practice, were used by the translator as far as it was possible to apply them in training eleven re-enlisted men and recruits who had joined his company after the close of the regular company practice, and near the end of the season in 1905. One of these men had previously qualified as sharpshooter, one as marksman, three as third classmen and six had never qualified in the marksman's course.

For three or four days before going upon the range, and also during the instruction practice while on the range, they were assiduously worked in these exercises, using the gun sling and peep sight. The range practice for these men in the marksman's and sharpshooters' courses covered six days and ended by four qualifying as sharpshooters, five as marksmen and two as first classmen. There was no flinching on the part of any of the men after the second day of the preliminary position, aiming and gallery practice exercises. It was also made a point to assure them from the beginning that if they constantly and faithfully applied the principle of the trigger pull, as taught them in accordance with the above methods, they would all qualify as first classmen or better, and the results fully justified the confidence that was inspired in them.

THE OPERATION AND MAINTENANCE OF A RAILROAD IN A THEATER OF WAR.*

BY CAPTAIN W. D. CONNOR, CORPS OF ENGINEERS.

II.



THE great difficulty in operating a military railroad has never come from failure by the railroad men to grasp the military requirements, but always from a failure by the military men to grasp the railway situation. The fact that a man in whom some governor is "reposing special trust and confidence" happens to be riding on a military railway gives him no ownership in the train nor the track, nor does it authorize him to give orders to the railway officials or employees, nor otherwise interfere in the operation of the road. This simple fact seems hard to teach, but experience both here and abroad has shown that it is absolutely the fundamental principle for the successful operation of a military railroad. Any officer must be held as responsible for an unauthorized order to a railway official or employee as he would be if he gave it to a regiment of infantry or to a battery of artillery. A South African railway official is quoted as saying that the attacks of the enemy on the line were not nearly so disturbing to traffic as the arrival of a friendly general with his forces.

The following order was issued in 1862:

WAR DEPARTMENT, A. G. O.
Washington, D. C., November 10, '62.

SPECIAL ORDERS No. 337.

* * * * *

Commanding officers of troops along the line of the military railroad will give all needful facilities to the officers of the road, and to the quartermasters in loading and unloading the cars so as to prevent delays. On arrival at stations the cars will be unloaded, night or day, and the whole train will be unloaded at one time, and parties will be ready to unload on the arrival of the trains.

* * * * *

Commanding officers will guard all the track and all the railroad property within the limits of their command, and will be held responsible for the results. Any military officer who shall neglect

*Continued from September JOURNAL.

his duty in this respect, on being reported by a quartermaster or by an official of the railway will have his name stricken from the rolls of the army.

No officer, whatever his rank, will interfere with the running of the cars or engines as directed by the director of military railways or of his agents. Any one who so interferes will be dismissed from the service for disobedience of orders.

By command of the Secretary of War,
(Sig.) E. D. TOWNSEND,
Asst. Adjutant-General.

General McCallum regards this order as the foundation of all the success that the military railroads had in their operation and the lack of such an order as the cause of the failures of the railways that were run by the military authorities on several occasions and which were dismal failures. He states: "Without it (the order) the whole railway system, which has proved an important element in conducting military movements, would have been not only a costly experiment, but a ludicrous failure. The fact should be understood that the management of a railway is as much a distinct profession as is the art of war and should be so regarded."

DUTIES OF THE CHIEF OF THE FIELD RAILWAY SERVICE.

With the commencement of the advance the duties of the chief of the field railway service will be:

1. To keep the commanding general posted as to the capacity of the railway, and to transmit the general's orders.
2. To repair and operate the railroad as fast as the army advances.
3. To protect the railway officials and operatives from the interference of the military forces along the road.

Our regulations place this officer on the staff of the general commanding the base and the line of communications. Colonel Girouard says emphatically that this is a mistake, and that after two years' trial of this system in South Africa it was decided that all such officers should be under the chief of the railway service, who is on the staff of the general commanding. This is the case in the German Army where the Chief of the Field Railway Service is directly under the Inspector General of Communications, who is one of the assistants to the Chief of the Staff of the Emperor.

THE ADVANCE OF THE ARMY.

As the army advances, the construction corps follows, repairing the bridges, sidings and stations. This part of

the construction corps must be in charge of men especially selected for their ability as rapid repairers. Their repairs will, as a rule, be temporary in their nature, and they will be followed by another gang that will make the permanent repairs. The first thing necessary is to get some sort of a line through and this cannot wait for the permanent repair. The ordinary train service will run to the beginning of the temporary line and from this point lighter locomotives will haul the cars to the end of the track. The division directly behind the army will be the most difficult to handle and it should be a great deal shorter than the others in the rear, where conditions are more settled and operations are proportionately easier.

Each division should have its own commissary, quartermaster and medical officers. The men should be provided with houses or tents and should be kept track of, as in any other military organization.

From the first there will be trouble from outside interference and from conflict of authority, unless past experience is profited by and distinct rules made to cover all possible contingencies before they arise. Officers charged with carrying out certain duties, and anxious to do them properly are not always able to see beyond their own sphere, and realize that there are a dozen other officers along the line with work that they consider more important than his and all of them acting as though they thought that the railroad was operated for their particular use, instead of for the service at large.

Military roads often cannot comply with nearly all of the demands made upon them when running at their best and unmolested, and chaos will surely result if outside interference is permitted at all.

RULES THAT ARE GENERALLY CONCEDED AS ESSENTIAL, AFFECTING MILITARY OFFICERS.

Military railway experience in this country and abroad has proven conclusively that the following rules must be observed if efficient service is to be obtained.

1. The duties of the railroad men are so special and so well defined that except in cases of emergency they should not be under the orders of any one except the railway officials. The commanding officers at the stations of the line should not be able to give

orders, either to the trainmen temporarily at the station nor to the employees at that point.

2. All orders and instructions in regard to the movement of trains must come from the superintendent or his representative. No orders from any other source will be obeyed unless from the commanding general, his chief of staff, or the chief of the field railway service, and such orders will be in writing, signed by one of these or given orally by one of them.

3. If, in case of emergency, the military commander gives orders in conflict with the regulations, he will sign the same and in doing so, will assume the responsibility, and every such case arising will be passed upon by the chief of staff. Such assumption of authority will not relieve the trainmen from responsibility for observance of all other points of the regulations not covered therein.

4. No person, civil or military, shall have the right to order the trainmen to detain a train or to run it ahead of its schedule.

5. Requisition for cars will be made well in advance and through the proper officer to the railway officials.

6. The superintendent will be notified in advance of important shipments so he may arrange to move them without delay.

7. Shipping officers should be warned that supplies should not be forwarded to an advanced terminus until they are needed; that stores for immediate use will be shipped first; and that unneeded stores will be stored at suitable points so as not to block up the line nor fill the advanced storehouses.

8. Government storehouses will be erected at all stations. Tents will answer for a time, and all stores must be unloaded immediately on the arrival of the cars and unnecessary delay of the cars is forbidden.

9. The exact time that a special will be needed should be given to the despatcher so that a siding will not be filled up unnecessarily. The work of the entire division might easily be delayed by not observing this rule.

10. Insolence, incivility, a lack of respect or of accommodation should be immediately reported to the superintendent. Only for extreme cases will the commanding officer of any station take the offender into custody, and even then he will report his action to the railway officials at once.

11. Officers on duty and despatchers, only, will be allowed in the telegraph stations, and loafing about the stations will not be permitted, as this is a fruitful source of information for spies.

12. The railroads will transport such men and materials as are ordered at any special time by the higher authorities; but all such men and materials must be authorized to move. This will not require involved red tape; for men, it means authority for their absence and for their transportation; and for materials, it means a proper bill of lading.

13. Freight requiring preference in movement will be shipped on a special bill of lading, or on one accompanied by a red slip, and shipping officers will be held responsible for the unnecessary use of either.

14. Officers commanding units ordered to move by rail will, upon receipt of such orders, telegraph the chief of the field-railway service the following information about the troops at each station:

The stations of the troops and their destination.

The number of officers, men and horses.

The number and kind of carts, wagons and guns.
 The approximate weight of the baggage and equipment.
 The time when the troops will be ready to move.
 Any other pertinent or special information.

On receipt of this information the chief of the field railways will make his plans and send details of his arrangements to the officers concerned. The troops must load their own baggage and animals.

15. As in all probability many railway supplies will have to be brought from the rear it should be a military offense to use railway materials for fuel.

16. Civilians should have permits to travel as well as passports to move about the territory.

17. Troops will not occupy railway buildings, except to defend themselves, if such buildings are needed for railway use. When so occupying such buildings, care will be taken not to interfere with the operation of the railroad.

18. All ordinary communications with the railway officials will be carried on through the local agents.

19. The senior officer, or non-commissioned officer, on any train will be responsible that order is maintained and that the regulations are obeyed, and he may order any soldier to assist him in this duty whether the soldier belongs to his organization or not.

20. All stock and horses will be watered and fed while enroute over the military railroad by the employees thereof.

21. All box-cars will be provided with removable seats for the transportation of soldiers and of the sick and wounded.

22. The railroad authorities will keep all surplus rolling stock away from the front so that the liability of its capture will be decreased.

23. The military railroad authorities will make arrangements with other roads for demurrage on cars that are kept over the allowable time. This will practically be renting such cars.

24. Cars will be taken from or left at a station on the orders of the train despatcher.

25. Special engines and trains will be arranged for by the train despatcher for the ordinary working of the division. Special movements of large size will be taken up in due season with the traffic manager by the officer in charge of the movement. Such special movements will, as a rule, be accompanied by and looked after by a train master who will meet the train when it arrives on his division and will accompany the same over his division.

26. Complete car reports will be made at least once daily so that the train despatcher may always know the location and number of empty cars, the probable number of loads for the next twenty-four hours, and the length of time that cars are being held for unloading.

27. The time of arrival and departure of all trains will be posted conspicuously in all stations.

28. A system of telegraphic time will be arranged for so that there will be uniform time at all points on the line.

29. The conductor is responsible for the running of the train, though for any actions clearly contrary to regulations the engineer is equally responsible.

30. Employees will comply with every request not incompatible with their prescribed duties, and if necessary to refuse they will do so civilly.

31. The chief of the field railway service will determine at any time whether any other than military supplies will be carried by the railroad.

RELATIVE TIMES REQUIRED TO GO BY RAIL AND TO MARCH.

Every body of troops that is ordered from one place to another will normally desire to go by rail, and if the road is taxed to any where near its limit, it frequently is not at all desirable to suspend freight traffic and carry troops. The question of the relative times required to march the distance and to go by rail will frequently come up.

Lét. D —the distance to be traversed.

N —the number of troops.

Z —the number of trains that can leave per hour.

Y —the carrying capacity of each train.

R —the rate per hour of train travel.

M —the rate of travel of troops marching.

As the troops can only march about eight (8) hours per day and as the trains and the loading can go on day and night, the problem divides itself into two parts, i. e. where $\frac{D}{M}$ is eight or less, and where $\frac{D}{M}$ is greater than eight.

In the first case; if $\frac{D}{M} < \frac{N}{ZY} + \frac{D}{R}$ it will take less time for the troops to march than to entrain and be transported. If $\frac{D}{M}$ is larger than the second term then the troops will go quicker by train.

In the second case; if $\frac{D}{M} < \frac{N}{ZY} + \frac{D}{R}$ it will take less time for the troops to march than to go by rail. If the second term is the larger the converse is true. (To be accurate, if $\frac{D}{M}$ equals a mixed number, the whole number only should be multiplied by 3 and the fraction added to the result.)

If the two terms are nearly equal and the railroad is heavily taxed by its freight the troops should march, unless there is urgent need of having a few soldiers on the ground at once.

Large bodies of troops take so long to entrain that they can go on foot quicker than by rail over much larger distances than can small bodies of the same troops.

NUMBER OF TRAINS POSSIBLE ON A SINGLE TRACK ROAD.

Given a certain type of engine and its load, the number of trains per hour that can be run over a single track road depends upon the distances between stations, the grades, curves and condition of the road-bed. There will be a certain interval between stations where a combination of the above elements will govern the number of trains that can be run per hour over that particular division. That interval is the one that requires the greatest length of time for a train to traverse in both directions. Every endeavor should be made to have these times equal for all intervals between stations and to accomplish this extra sidings, engines and flagmen must be used. This same effect could be accomplished by lightening the loads at different stations, but it is not expedient to change the loading so often, and other measures must be resorted to.

ECONOMIC RELATION OF TONNAGE AND TRAINS.

The engines are changed at the ends of the freight divisions and at this point a change can readily be made in the load in each train. The number of tons that an engine can economically pull over a division is called the tonnage rating of that engine for that division. This will vary on different divisions, due to the three elements before mentioned. When a new section of the road is taken over for operation, the superintendent should have a study made of the new line and the old line, together, to see where, by putting in new sidings, improving the road-bed, or putting in extra engines, he can increase the possible number of trains per day or the number of tons per train.

The economic arrangement will be when the maximum number of trains per day over a division, multiplied by the maximum tonnage rating of the engines used, is the same for all divisions. To do this exactly is impossible, but every step toward this end will increase the efficiency of the road. If the carrying capacity exceeds the demands made upon the road, there is no particular need of exertion to get the full work out of the road, but the Southern States, France, Egypt, the Philippines and South Africa are all examples of wars carried on without sufficient railway facilities and no record has been found of one waged with an excess of such facilities.

CAPACITY OF A DOUBLE-TRACK RAILWAY.

Assuming as before that we have determined the capacity of our engines over a certain stretch of tracks, the number of trains that can be run per hour over a double-track road, until we reach one continuous line of cars at the limit of speed, is only limited by the consideration of safety. Trains break in two, engines fail and other accidents happen; and if the train behind is too close it runs into the disabled train before the proper precautions can be taken. Trains running very close together are limited greatly in the speed that they can attain, and probably on a military road the best system that could be applied would be the closed block system where no two trains are allowed in the same block except under special conditions, and then the second train runs with a precautionary permit that warns the engineman that he is running behind another train and has not a clear road in front of him. These blocks should be at stations if they are not over five or six miles apart, as this has been found to be a good length for the blocks. The agent at the block sets his block against traffic as soon as the train passes his block and holds it there until he receives word from the next block operator that the train has passed his block and that the track is open between them.

TRAINS ON THE RAILROAD BEHIND SHERMAN'S ARMY IN 1864.

The trains on the Nashville and Chattanooga Railroad in 1864 were run in fleets of four trains each and four such fleets were sent each way daily. These trains averaged about ten cars of ten tons each, making the total about 1600 tons that went to the army daily. General Sherman says that "this exceeded the absolutely necessary needs of the army and allowed for accidents that were common and inevitable." This army, at this time, consisted of 100,000 men and about 35,000 horses in a hostile country.

The carrying capacity of all roads has increased enormously since the Civil War and cars of fifty tons capacity are common to-day while cars under twenty tons capacity are uncommon. The number of such cars that can be hauled by one engine varies with the class of engine and with the compensated grades of the road. The railroads of this country are to-day all engaged in reducing grades and strengthening bridges. The most favorable data that I have at hand is

the line of the New York Central system from Ashtabula, Ohio, to Youngstown, Ohio. Over this division 5600 tons is the maximum load that can be hauled in one train. The dead weight of a car is about one third of the gross weight of the loaded car. Therefore, on the above mentioned road one engine can haul thirty-seven times what one could to supply Sherman's army.

COMPARISON OF THE RAILROAD, NASHVILLE TO ATLANTA, 1864 AND 1905.

The above is a special case of a low-grade (0.3%) ore-carrying road, but on the railroad running from Nashville to Atlanta, via Chattanooga, the regular freight engines to-day haul 950 to 1050 tons. Deducting one third for the dead load, about 634 tons remain as the load per engine. Therefore one engine can now haul about six and one third times what one could over this same road in 1864. Some of the material in army supplies, such as forage, is very bulky, but the ammunition is just the reverse and a judicious arrangement of the loading would give each car about its normal load.

QUESTION OF THE OPERATORS.

On account of the existence of the signal corps a question might arise as to the feasibility of using these troops for the telegraph operators on the railroad. This could be done if the operators were to be entirely under the control of the railway officials but any division of the control with the signal corps would be simply out of the question. The signal corps is responsible for the military lines and might have its lines on the same poles as the railroad lines, its offices in the railroad buildings and messages going and coming between the same persons, but its first duty is military and a complete separation of the two in all essentials is imperative.

The railroad telegraph lines must be at all times open for railway use, if trains are to be run over the road. When military necessity requires the use of the railway telegraph lines it is another case; then the trains will stop running temporarily and the telegraph will be turned over for military use upon an order from proper authority.

MAINTENANCE OF WAY.

Maintenance of way on a military road is practically reconstruction in a great many cases, and requires a much larger department than the one of the same name on a civil railway. The amount of damage that an active enemy can do to a railroad is illustrated by Hood's move against the Western and Atlantic Railway in October, 1864, when thirty-five and one half miles of track and 455 feet of bridging were destroyed in one place. The rapidity of repair is shown at the same time, for ten miles of the break were repaired while the Confederate troops were still along the line of the track and the other twenty-five miles within a week after the repairs were started at the conclusion of the raid. The break only delayed traffic thirteen days.

In the Division of the Mississippi alone the construction corps rebuilt over nineteen miles of bridges and trestles and 433 miles of track between March 1864 and September 1865, at a total expenditure of \$12,115,881.11.

On the Louisville and Nashville Railroad out of forty-three bridges there were only six that were not at some time destroyed by the enemy and of the other thirty-seven one was destroyed five times while many of them were destroyed three times.

The rebuilding of the Chattahooche bridge still stands as a record of military bridge building. This trestle bridge, 780 feet long and ninety feet high, was rebuilt in four and one half days. The timber was cut from the adjacent forest.

To be able to accomplish results like the above, one hour spent in previous preparation is worth more than days and weeks spent in perspiration when the critical time arrives.

THE DIVISION ENGINEER.

The division engineer is in charge of this department; he must not only be a good engineer, but an organizer of the best kind, for upon his energy, ingenuity and ability depends to a very great degree whether the road is running in good order practically all of the time or whether most of the time is spent in repairs.

CONSTRUCTION SECTIONS.

The line is divided into construction sections and each of these sections, of about 100 miles in length, must be com-

pletely equipped for every kind of construction that may be required in that section. The men, materials and tools must be where they can be started toward the break on a few minutes' notice. This is especially important in a country where the inhabitants are hostile, or in one infested with guerrillas.

WRECKING OUTFITS AND CREW.

At some point near the middle of each division of 200 miles must be a complete wrecking outfit and crew, ready at all hours to move on ten minutes' notice. Such an outfit must be equipped with an all round swing derrick, and in the cars in rear must be every kind of useful wrecking and repair tools, with a hospital for the injured and a full supply of food and bedding for the men. All the above costs money, and there is no possibility of ever having any sort of a railway outfit in time of peace; but with a people as prodigal in war as they are penurious in peace, some plans ought to be on hand so that when war does come we will be prepared.

On the railroads in the Division of the Mississippi there were at one time 6000 employees in the construction corps. It may be stated as an axiom that no useful, economical and efficient organization of 6000 men can be made without preparation. Each division of about 100 miles had about the following employees in the construction corps (when in actual service).

One division engineer, one assistant engineer, one rodman, one clerk, two draughtsmen, two messengers.

The employees were subdivided into five subdivisions with a supervisor in charge of each.

DIVISION OF THE DUTIES.

Subdivision No. 1.—*Supervisor of Bridges and Carpentry Work.* Clerk, timekeeper, commissary, quartermaster, surgeon, hospital steward, six foremen, thirty subforemen, 300 mechanics and laborers, two blacksmiths and twelve cook.

Subdivision No. 2.—*Supervisor of Track.* The rest of the organization was the same as the first subdivision.

Subdivision No. 3.—*Supervisor of Water Stations* with one foreman and twelve mechanics and laborers and one cook.

Subdivision No. 4.—*Supervisor of Masonry.* One foreman, ten masons and helpers and one cook.

Subdivision No. 5.—One driver foreman, eighteen drivers and a cook.

In addition to these there were two train crews consisting of two conductors, four brakemen, two enginemen, two firemen and a cook.

ORGANIZATION OF THE PERSONNEL.

The commissary was charged with the drawing, caring for and issuing of rations. The quartermaster was responsible for the tools, camp equipage and other property. Each foreman was responsible for the tools that his gang had for use at any time. The foremen were appointed by the division engineer and they in turn appointed the subforemen. The division engineers and their assistants were appointed by the chief engineer.

A division like the above was complete in itself, was ready to move to any point on the division and ready to do any sort of work. "Being from the nature of the case entirely ignorant of the obstacles to be met with in the advance, the construction corps has to be prepared for any emergency; either to build a bridge of formidable dimensions, or to lay miles of track, or perhaps to move back to some point on the line and repair damages done by guerrillas or raiding parties. These attacks on the line in rear became of such frequent occurrence, and often of so serious a character, that to insure speedy repair it became necessary to station detachments of the construction corps at various points along the road and also to collect supplies of construction materials, such as rails, chairs, spikes, cross ties and bridge timbers, at points where they would be comparatively safe and easily obtained when required."

These precautionary measures proved of the utmost importance in keeping the road open. The detachments stationed along the line, composed of bridge builders and track layers, had an ample supply of tools for either kind of work. Each detachment was under the command of a competent engineer or supervisor, who had orders to move in either direction, within certain limits, as soon as a break occurred and to make the repairs, working night and day if necessary. When big breaks occurred one or more divisions of the construction corps were moved as rapidly as possible to the break, either from Chattanooga or from the front. Construction trains loaded with the requisite tools and materials were kept ready at each end of the road to move at a minute's notice.

In 1862 it was found that about one locomotive and twelve cars were needed for every two miles of track to supply an army of 100,000. To-day the engines are able to haul

about seven times what they did at that time; the cars average about two and one half times the carrying capacity, the speed is about one and one half times as great, while the needs of the army have only increased about one quarter. Taking all these factors into consideration, it is believed that at the present time one locomotive and thirty-five freight cars and two passenger cars for every fifteen miles of track would be a fair estimate of the rolling stock necessary to supply an army of 100,000. This makes allowance for the inevitable break downs and the necessary repairs, that are much more frequent on a military than on a civil railroad.

In North Carolina, with six locomotives and eighty-seven cars at the disposal of the railroad, 3000 carloads were sent from the coast to Goldsboro, a distance of about sixty miles, in two weeks.

PROTECTION TO TRACKS AND TRAINS.

Owing to the ease with which a line of railroad can be broken, the entire line exposed to the enemy's attack must be protected and special attention must be paid to the most vulnerable points which are, bridges, tunnels, and viaducts. There are two methods that have been used separately with more or less success, and together with marked success in the late wars. These are, the use of armored trains and the system of blockhouses. Blockhouses were used extensively in the Civil War to guard the Union railways, while in South Africa the British used armored trains exclusively during the early part of the war. A combination of the two systems of defense was finally adopted by Colonel Girouard and against a foe as wily, indefatigable, and determined, as was the Boer, it worked most successfully. Each supplemented the others in its weak points and the armored trains were a sort of mounted reserve for the skirmish line of blockhouses.

SOUTH AFRICA.

The final system in South Africa was to have a blockhouse about every 2000 yards, while at central points on the line the armored trains were held ready at all times to over a threatened section. All trains had one armored car next to the engine, and all locomotives were armored over the vulnerable parts and about the cab of the engine man.

BLOCKHOUSES.

The blockhouses would be the ordinary type for twelve to fifteen men, protected around the bottom by a parapet, and covered by a sheet metal roof. The system would include blockhouses at all the important vulnerable points, and the entire system should be connected by telephone.

MEN.

Fifteen men every 2000 yards means about one battalion of 400 men to every twenty miles of track. This allows three companies in the blockhouses and one company for a reserve. The line must be continually patrolled during the night and in stormy weather.

ARMORED TRAINS.

Armored trains are composed of from four to six cars whose sides are armored with sheet steel through which port-holes are made for the guns. Each train has an infantry escort in the cars.

Colonel Girouard says of these trains: "It was some time before the proper functions of armored trains were understood, either by the army or by the railroad department."

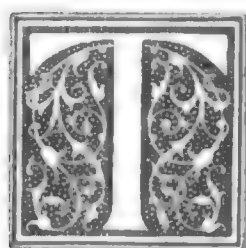
At the beginning of the war there were five of these trains on the road. "The armored trains led a precarious existence, for some time, being constantly sent scouting for many miles up the railroad, without any support, with the natural result that one of the Natal armored trains was destroyed by the enemy on the 15th of November, 1899, outside of Chieveley. The trains on the Cape Colony were more fortunate and had several lucky escapes. Owing to these incidents, the impression that armored trains were useless became general. At this stage of the war, used as they were without support ahead of the advance, exposed to the artillery of the enemy, armed only with Maxims and rifles, they certainly were useless; but later, when we had all the lines in our possession, with fortified posts every few miles along the railroad, and the enemy's artillery had become scarce, the armored trains, which now carried guns, were invaluable for protecting the line and frequently succeeded in damaging the enemy. There is no doubt also but that the enemy disliked them intensely, and the presence of an armored train had a great moral effect.

THE ORGANIZATION, MAINTENANCE AND TRAINING OF FIELD BATTERIES IN THE ORGANIZED MILITIA.*

BY LIEUTENANT JOHN F. O'RYAN, FIELD-ARTILLERY,
NATIONAL GUARD S. N. Y.

II.

OFFICERS—PHYSICAL AND EDUCATIONAL REQUIREMENTS, COMPENSATION.



THE present source of officers generally throughout the militia is the personnel of the commands in which they are to serve. Generally speaking, officers are elected by the enlisted men, and upon passing a mental and physical examination are commissioned by the governor. In some States examinations are not required, while in others they are merely formal. The necessity for an officer, particularly an artillery-officer, to possess a proper general education needs no extended argument here. Bacon said that "histories make men wise; the mathematics, subtile; natural philosophy, deep; morals, grave; logic and rhetoric, able to contend." An officer should possess these attributes, and base his scientific and professional education on them.

The present system of selection of officers by election is so contrary to all military principles and to all the teachings of military history that it might not be improper to say that the men who advocate its continuance in the militia must be either ignorant of military history or wilfully perverse. Many commands are kept in a continuous condition of disorder as a result of this pernicious system. No sooner have the bad effects of a hard political campaign for the election of a company officer begun to disappear, when perhaps another vacancy exists and the same conditions recur. It is not human that officers who have taken an active part in such election, and in the campaign which precedes it,

* Continued from September JOURNAL.

should not have acted in a manner and made errors incompatible with the correct attitude of an officer. In this connection it might be well to point out that at one time, in New York State, the non-commissioned officers were elected by the men. Discipline did not begin to exist until after that system was abolished. They are now appointed by the company commander and warranted as in the army. Officers of signal companies in New York State are appointed, not elected, and there has been no objection heard from any source. The system, however, which is suggested as the best yet devised, is that recently proposed for adoption by the State of New York, and more particularly explained in *THE JOURNAL OF THE MILITARY SERVICE INSTITUTION*, Vol. 32, p. 259. In brief, the system is promotion by organization seniority, subject to a rigid examination; the senior in line for promotion, however, to have the privilege to decline promotion. An officer who fails to pass the examination to have the right to be examined within not less than three months from the first examination, and in the event of a second failure, to be allowed to resign and receive honorable discharge, if entitled to it in other respects. The proposers of the system in question, with an evident desire not to appear too radical, left the filling of vacancies in the grade of second-lieutenant to election by the enlisted men, as at present.

To do away entirely with this evil is to be desired, and therefore, in this hypothetical battery which we are considering, the candidate designated to take the examination for second-lieutenant, together with an alternate, would be named by a board consisting of three battery commanders, of whom the company officers of the organization in which the vacancy existed would be one. This board would consider under present rules the qualification of every man who applied to be considered or whose name was presented in connection with the vacancy. Thus without any election the sergeants and other enlisted men could be considered, as could also desirable and well-educated graduates of military schools, or civilians and ex-officers of the army or the National Guard of other States. The candidate selected should be under thirty years of age, and after passing a proper physical examination should be examined in spelling, U. S. history, general history, geography, English grammar and rhetoric, arithmetic, plane geometry, algebra, at least as

far as quadratic equations, trigonometry, civics, artillery-drill regulations, elementary matter and minor problems in "Bruff's Ordnance and Gunnery" and "Dyer's Hand-Book of Light Artillery," "Febiger's Field-Fortifications," and knowledge of the horse, his training and care.

We now come to the subject of compensation for officers. The situation existing at the present time is incomprehensible to those not familiar with the evolution of the present militia officer.

At the present time in New York State a small allowance is made annually to each officer to assist in uniforming himself, but the assistance is inconsiderable. In Illinois officers and men are now paid for all drills and target-practice. The time has now arrived when the Government and State must offer some inducement for service in the organized militia other than an opportunity to spend money, if the standard of its military efficiency is to be further raised and maintained. Officers of our command average two drills each week, with extra work in the form of pistol practice, non-commissioned officers' school and the time involved in the preparation of lectures therefore, study in ordnance and gunnery, reports, and in the spring, summer and fall, outdoor exercises, practice marches and gunnery. This with the requirement that the officer must so regulate his civil business as to be ready at an hour's notice to serve the State in a riot, or the Federal Government for a period of nine months, with a possibility of being maimed for life or killed in action, makes it difficult at present to obtain philanthropists in sufficient numbers and properly educated to fill vacancies. Militia officers should receive one-half pay of their grade during drill season and full pay for all time in service, in camps of instruction, on practice marches, or at outdoor target-practice. There are some officers who do not now perform the work they should, and with this system of compensation the Government and State would be in a position to raise and maintain the standard of the commissioned personnel. Many college men with well-trained minds and bodies who cannot now afford to consider a commission in the militia would be attracted to the service, and the Government and State would be the gainer in an inestimable degree.

ENLISTED PERSONNEL—PAY.

“*Our business in the field of fight is not to question, but to prove our might.*”—Homer—Odyssey.

This principle of military discipline has maintained its importance from Homeric times to the present day. Discipline existing, the efficiency of the command is yet dependent in a great measure upon its physical might and endurance. The most important fact concerning the militia personnel is that its physical standard is not what it should be. The true conditions in this respect are generally lost sight of in the admiration for the prowess of the militia athletes. In athletic contests, wherein the men of the militia and the army jointly participate, the latter are usually outclassed, and from this, erroneous ideas are engendered. It is not always remembered that these contests are means to an end and not the end. The end sought is the physical fitness of the men of the command *for service in campaign*; not the production of a champion hammer thrower, pole vaulter or sprinter. The company, troop or battery is not the gainer in its fighting efficiency because it carries on its roster one or more of these men, except, perhaps, as it might be indirectly benefited by the resultant improvement in its *esprit de corps* and company pride. The physical standard of militia commands is not up to that of regular commands. The army command is more homogeneous. The militia command is made up of extremes. In a field-battery the men should be chosen for their nerve, good physique and intelligence. They should be of medium height, and of a type more wiry than burly, and full of resolute courage. The city of New York, and in fact most of the cities and towns throughout the country, are full of such young men. They are in most cases mechanics. They are as a rule intelligent, full of spirit and reckless courage, and but need the valuable training only obtained through military discipline to round them out. But these young men as a rule are not attracted to the military service, either regular or militia, in time of peace. They are very practical, and with a keen business view quickly decide that there is no compensation for the work involved, and that nothing is to be gained by enlistment. We are therefore confronted with the problem of making the service attractive to such men. You can appeal to the sentiment of this agile, mus-

cular, intelligent mechanic, this ideal light-battery man, in time of war. Then you can get him in numbers and for no pay if the Government so willed it, but as we have seen he is of little use then. He is untrained and the time is too late to train him. He does not understand this, he is so confident of himself. In time of peace, however, this man is devoid of military sentiment, and to attract him to the ranks where he can be properly trained and prepared for war, the Government and State must make him a business offer, which means fair and reasonable compensation for attendance at drills, target-practice and theoretical schools, as well as at camps of instruction, maneuvers and riot duty. With this inducement there would be a moral as well as a legal right to require of the enlisted man a full measure of efficient work. The good effect on discipline would be at once noted. There would then not exist the hesitancy to administer fines for delinquencies, which now obtains to the detriment of discipline. As to the amount of such compensation, it should be for all drills or schools at night, and for all drills or target-practice during the day where less than one half a day is spent in such work, one half the State per diem pay. Thus, in New York State the private soldier draws \$1.25 per day when in the State service or in camps of instruction, and under the above pay schedule he would draw for all evening drills or schools sixty-two cents and the same sum for all outdoor drills during the day when less than one half a day is spent in such work. Payrolls would be drawn and certified in the usual manner and payments made monthly by the paymaster.

With the subject of pay provided for in the above manner, the proper fighting physical material would be available for the battery, discipline would be more readily enforceable and the command would take on the traits and qualities of a body of professional soldiers. When this is considered in connection with the dormitory plan outlined under the head of *quarters*, it can well be claimed that the battery in discipline and efficiency can be brought to a very high standard. The nucleus of men living at the armory would be added to by the force of armory employees, all of whom would be enlisted in the battery. In New York State the average armory employs an armorer who is paid at the rate of \$5 per day, and an engineer and other employees whose number

is based on the floor area of the armory and the number of horses to be cared for. They draw on an average from \$2 to \$3 per day each. They are paid by the county or State, and are selected by the commanding officer of the command quartered in the armory. Thus a field-battery would ordinarily have six or eight employees. An excellent first-sergeant with experience and a good army or militia record would be appointed armorer. He is thus assured of a proper living for himself and family, and devotes his life to the duties of his position, which is really that of a professional soldier. In the same way the other positions would be filled by old soldiers. No one will doubt the great beneficial effect on discipline of the presence of this nucleus of professional soldiers constantly on duty in the armory. In our battery this plan has been carried out most effectively.

DISCIPLINE.

If this subject is considered at some length, it will be on account of its vital importance and because it is practically non-existent in some militia commands.

Discipline has been defined as "a course of exercise and practice in order to bring under control and to qualify for harmonious and effective action." It is direct submissiveness to order and control. Discipline depends not only upon prescribed forms and observances, but upon the qualities and personal force of officers. We all know that without the assistance of prescribed forms or ceremonials of respect and submissiveness, or of rules and regulations in support thereof, there are individuals who can command the attention, respect and absolute submissiveness of a large number of others, and do this without threats or appeals or even reference to the subject of discipline. Such persons are found not only in military life, but throughout the industrial world. This ability seems to have no direct dependence upon the muscular power of the individual possessing it, nor yet upon his intellectual attainments. It is a psychic force which announces itself to others almost instantaneously. It is observed in school and college life where the pedagogue absolutely incapable of maintaining respect, discipline and order is sometimes an athlete and as often an erudite scholar as a man of intellectual mediocrity. We have also observed instances in military and civil life where a large number of men have

been held down to a strict discipline, order and respect by that indefinable psychic something in the personality of one man who made his dominancy felt and respected from the first instant that he assumed command. Such a force asserts itself; it needs not to be advertised or billed in advance, nor the way prepared for it. When its possessor "takes hold," that dominant force seems to overwhelm the individual and collective assertiveness or unruliness of all within its sphere of influence. But in military life as in civil life we do not find all those in positions of command possessing this force, and to supply the deficiency in the enforcement of discipline there has been created what may be termed an artificial psychic force, supported, aided and maintained by the ceremonials, rules and regulations prescribed for that purpose. In this manner the ill effects of the lack of the true dominant psychic force in the maintenance of discipline are minimized.

In the militia, if good discipline is to be maintained, the service can no more afford to do without these ceremonials and observances than can the regular establishment. In our army, as compared with European standards, these have been reduced to a minimum, and they cannot safely be disregarded or laxly enforced in the militia. There are in existence in the militia in some parts of the country several old hoaxes which seem to bear the proverbial charmed life. One of these is that the literal and strict enforcement of the distinction between the enlisted and commissioned personnel is not practical or desirable in the militia. This is based on the statement that it would be considered degrading by the enlisted personnel and because the high standard of intelligence of the latter makes such distinction unnecessary. It is this attitude which furnishes the foundation for the host of anecdotes generally current of the militiaman's weakness for cracking his captain or colonel on the back and asking him what the plans are for the next day, or doing some other equally preposterous and incongruous act. The day for this relationship (if it ever existed) has long since passed. It does not obtain in civil life; why should it be clung to in a field of endeavor wherein discipline is more important than in any branch of civil life? One cannot imagine the clerks in any well-conducted business office, nor the mechanics in a large manufacturing concern addressing the employer or the *alter ego* of the employer in an informal manner, nor seeking

his confidence as to his plans. The fact is that the business relationship of this character is frequently not as close and friendly nor even as informal as that which exists between officers and enlisted men of the Regular Army. Employees in civil life frequently have not access to the employer even on a matter within the scope of their duties, but must confine their relations entirely to the superintendent or other representative of the employer. Yet this is not considered by them any reflection upon their moral, mental or social worth, but as a necessary incident to the maintenance of discipline, without which no large civil or military organization can avoid disruption. For the very reason that the relationship between officer and man in military life is close—that the officer must regard the physical and moral welfare of the man and come in contact with him in order that he may know his individual capabilities and limitations, and that his duty is not solely to see that he receives his stipulated wage—for this very reason that relationship must be safeguarded by formality and ceremonial in order that kindness may not be mistaken for weakness, interest for favoritism, and that unremitting guardianship may not result in entangling familiarity.

Discipline with all its exemplifications may be real or it may for occasions be acted or assumed. We do not hesitate to say that the kind of alleged discipline which obtains in a command wherein the enlisted men salute officers and follow other required customs of military courtesy with great care and ceremony when in uniform, and immediately upon resuming civilian attire disregard them and are permitted to go out of their way to accentuate the fact that the relationship terminates when the uniform is doffed, is but a sham. In such a command, the courtesies are rendered by the grace of the men. The men are actors. They consent to play a part for a couple of hours a week, but during the remainder of the time they act toward their officers as they would not act toward the same men if they were their employers in civil life. What does this signify? It signifies that when that command is called out for any service those men will, in a day or two, drop the sham, acted, assumed, armory attitude, and chafing under the many restrictions and some hardships perhaps of the service, revert to the actual, familiar and perhaps boisterous relationship of every-day life.

Under such conditions, discipline cannot exist and the command ceases to be efficient. The enforcement of the true discipline at all times will make it consistent, real, actual and acknowledged. The cheerful acceptance by the men is not difficult of accomplishment where the officers are educated men and gentlemen, whose lives and actions inspire respect. In the large cities where the officers and men are not so apt to come together in daily life as they are in the small towns, the problem is greatly simplified.

MATERIAL.

From the table of artillery armament of the organized militia hereinbefore set forth, it will be observed that many of the existing militia field-batteries are practically unarmed. It should be the policy of the Government to foster the pride of these organizations in themselves by intrusting to them the latest artillery *material*. This will be done in a measure when the eighteen batteries authorized by statute for the militia are issued. It is impossible to get either officers or men to take any serious interest in their work, if they know that it is expended in perfecting themselves in the handling of an archaic and useless weapon. For the same reasons the equipment issued to the militia should be of the latest and best type. The ammunition should be of the proper quality. Artillery target-practice does not occur so often in the militia commands that they can afford to be handicapped by poor ammunition. At a recent practice of our battery the field-artillery combination fuzes used in the shrapnel bore pasters showing that they were put up in 1891. They had consequently entered upon their teens, and acted in a most fickle manner, bursting the shrapnel at all ranges from the muzzle to the objective with the same time-setting. If in the matter of ammunition issue the Ordnance Department regards the militia artillery as a good field for the disposal of old and defective ammunition, much will be done to undo the good work accomplished in other respects. The accountability of the militia officers for the valuable artillery *material* entrusted to them is already safeguarded. The artillery *material* in New York State is always maintained in the most perfect condition, and every item of equipment is scrupulously accounted for.

HORSES.

The greatest need of the militia batteries is a proper motive power. The guns cannot be fought, no matter what the gunnery capabilities of the gunners may be, if the horses are not at hand to take the battery through all the preliminaries and place the guns on the firing line. If necessary, the militia act should be amended to permit the State to draw from the Government horses as well as *material* and have the same charged against its allotment. Proper regulations governing accountability for horses could readily be made, insuring protection to the Government. The field-batteries should appeal more to the Government than to the State. Their use by the latter is a remote contingency, much more so than the possibility of war. The necessity for the horses of a field-battery, or at least of a proper nucleus, to be trained in their work, to be undismayed by firing and excitement, and accustomed to the varied requirements affecting their work, needs no extended argument.

TRAINING OF THE BATTERY, AND THE STANDARD OF EFFICIENCY ATTAINABLE.

Much of the elementary training of the battery can be accomplished by volunteer work and extra drills without the expense to the State of pay. If military games were held semiannually, with several prizes for each event, the men generally would compete, and for a month or two preceding the games would voluntarily put in extra time in training therefore. These events should all be practical and include tent-raising, wall-scaling, horsemanship, harnessing a wheel pair in darkness, jumping, loading a wagon, mechanical maneuvers, etc. Pistol competitions and subcaliber matches for prizes would insure a high standard of pistol marksmanship and aid in gunnery efficiency. Rewards for proficiency as disclosed by recitations and examinations in camp sanitation, care of horses, regulations, gunnery, range-finding, signaling, etc., should promote the possession of good theoretical knowledge of these and kindred subjects among the enlisted men—knowledge which is a really necessary basis for practical work. In a city or large town the public are always interested in these military competitions, and the admissions charged to witness them would more than pay

for a large number of suitable prizes. It is a human weakness to make comparisons. Last winter, while mounted platoon drills were being held in our armory, it occurred to the writer that the time used in harnessing the horses could be greatly cut down. In the militia we must always keep in mind the importance of not encroaching on the prescribed drill period with other work. The drivers were therefore notified that those who wished to remain after the recall and compete in a test for speed would be permitted to do so. A large percentage remained, and the competition was had, and the winner declared. This was continued after each drill for a period of about two months, the men getting quite interested in the competition, and manifesting considerable rivalry. In the competition each chief of section of caisson corporal would announce "Ready, sir," when his team was harnessed. The order in which the announcements were made was noted. The team first announcing "Ready" was not necessarily the winner, for when all were ready, they were inspected for tight throat lashes, twisted traces, unlocked pole-props, tight breeching, uneven or faulty position of saddle blanket, etc., and those teams which were not perfectly harnessed were disqualified, and of those remaining that team which first announced "Ready" was declared the winner. It thus often happened that the second or third team to make the announcement was the winner. This all led not only to greater speed, but to greater care in harnessing. The results flowing from these two months of competition were remarkable. The time of harnessing was greatly reduced. Drivers got accustomed to moving with life, and became intimately familiar with every buckle, strap and hook on the harness, and the requirements governing their position, object and use. Later, these competitions were had in the darkness, that is, under conditions approaching those in the field at night. The improvement here was very great. It should be remembered that all this work was voluntary and did not interfere with platoon movements of the drill period. In the same way much extra work can be gotten out of the men along other lines of training.

It is customary for militia commands to voluntarily visit other cities or places of historic interest. In some organizations on such occasions breaches of discipline are numerous and punishments seldom inflicted because of supposed want

of authority—the trip being voluntary with each man. A sentinel on such occasions who quits his post without leave is not always punished. This is disastrous to discipline. Men permitted to do such acts are not going to draw legal distinctions between service under orders and voluntary service. The command should never be allowed to go on such trips unless under the same conditions as to discipline that would obtain if the command were on duty. On the occasions of such trips the commanding officer should call for volunteers, and when the list of those men who are going is complete, they should then be ordered to assemble for the service in question. The particular service would then be voluntary, but the men composing the command would be unquestionably under orders and amenable to regulations. Under such conditions such trips are very good training, particularly in matters of transportation and subsistence.

The general efficiency of the men is affected largely by early training. If the soldier is made to conform to customs and requirements from the moment he enlists and finds that all his comrades are treated in the same manner and that punishments follow infractions of discipline, as sure as night follows day, he soon becomes tractable. Efficient non-commissioned officers are indispensable, and they should be selected with care and discretion, and required to diligently instruct recruits in their work.

In reflecting upon the degree of efficiency which is attainable by a militia battery, the standard of comparison is, of course, the regular battery—a battery composed of men who have no other duties or responsibilities but those relating to the military service. But the ratio of attainable militia efficiency to the army efficiency is not the same ratio which the few drills period of the militia battery bear to the entire time of the professional soldier. It is said that the regular soldier is a soldier *all the time*; the militia soldier but *part of the time*. This is true; but during the entire “part of the time” which the citizen soldier is a soldier, he is doing strictly soldier duty, that is, he is receiving military instruction, being drilled or engaged in target-practice. The regular soldier, undoubtedly, as a rule, receives more of this instruction and drill and from better instructors than does the militia soldier, but to say that he is receiving such drill and instruction, or that he is doing a soldier’s work *all the time* is not

correct. The amount and diversity of manual, mechanical, and laboring work done by regular soldiers about the various posts, often times to the exclusion of practically all strictly soldier work, is surprising to those not familiar with the custom. In many garrisons in northern latitudes, during the winter months (which means about one half the year), few mounted drills are held by mounted commands, and a large part of the work of the enlisted men consists of grooming and caring for horses and caring for equipment. To know how to groom and care for equipment is important, but an ordinary man can learn to do the work properly in a few months, and further practice, except sufficient to keep alive his knowledge and skill, does not make him a better or more efficient soldier. The amount of book and paper work annually done by officers and enlisted men in the army is remarkable, and we have the testimony of regular officers that the desire to cut it down by one-half is widespread throughout the service. It may be said that they have schools in the army for enlisted men during the winter months. So have they in the militia, at least in New York State. Again, in the army even during the winter the men are used to the regular life, daily accustomed to the restraints of discipline, and daily receiving the important benefits from systematic physical culture. True, and under the system outlined in this paper a large nucleus of our hypothetical militia battery will *daily* receive the same benefits. It is not claimed that militia batteries can attain the standard of efficiency of regular batteries. The more the militia officer studies, and the more he makes of his work a profession, the more convinced does he become of the importance of a large increase of the regular field-artillery, and it is only the knowledge that Congress will not provide for this increase in sufficient numbers which prompts the desire for the next best substitute, and the raising of the efficiency of that substitute to as close an approach to the army standard as is possible.

No difficulty is experienced in our mounted commands in the matter of horsemanship, and with proper officers and facilities this should be true of mounted troops in all the States. It is simply a question of physical fitness and adaptability with proper and sufficient training. At the military tournament annually held in New York City, one of the cavalry troops of this State divides the cavalry period of the

exhibition with a regular troop, and a comparison of their horsemanship is not unfavorable to the militia troop. This troop maintains in its armory about one hundred cavalry horses.

A field-battery, and in fact all mounted commands, should have field-service for at least a week or ten days in each year. When the battery receives this experience but every other year, its efficiency falls about fifty per cent. This is one of the most important points in the entire subject of the battery's military efficiency.

Every second or third year the battery should participate in the army maneuvers. The maneuvers are so manifestly essential to the nation's military welfare, that after the present year the agitation regarding their continuance will doubtless be so general that Congress will provide the necessary appropriations. Militia batteries, however, should not be sent to the maneuvers unless the United States inspecting officer has previously certified in his report that the battery is sufficiently advanced and prepared for such work. If this had been done in the past we would not have read in the recently published report of the army maneuvers at Manassas that with one exception the militia batteries were worthless. The policy of keeping at home the efficient batteries and sending to the maneuvers the inefficient batteries would not have obtained.

It is submitted in conclusion that the artillery arm is of dominating importance on the modern battle-field, that our next war must see us possessed of a numerous field-artillery and a well-trained personnel, if we are to look for military success. That least of all can this arm be hastily improvised at the outbreak of war. That aside from the necessity of an increase in the regular field-artillery, there is an imperative need for thoroughly training and preparing for war a considerable number of efficient field-batteries in the organized militia, and that such batteries can be so trained and prepared under the conditions suggested in this paper. With educated officers receiving reasonable compensation, enlisted men physically fit receiving pay for actual services rendered, with horses and *matériel* issued by the Federal Government, and armory facilities provided by the State, and with discipline rigidly enforced and maintained, as outlined above, there can be little question of the value of such batteries to

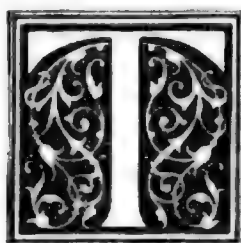
IN MANCHURIA: THE BATTLE OF SHAKHE (SHA) RIVER.*

BY GEORGE DE SALLE.

(TRANSLATED FOR THE SECOND DIVISION G. S. from *La Revu de Paris*.)

BY LIEUT.-COLONEL JAMES ROCKWELL, JR., ORDNANCE DEPARTMENT.

II.

OWARD one o'clock the firing slackens, shows intervals, becomes infrequent. I seek shelter from the wind at the bottom of a trench.

While opening boxes of canned provisions and breakfasting at leisure I go over in my mind the events of the morning and think what war is! When I came to Manchuria I had a thirst for epic encounters, great shocks and great strokes, heroic charges; I had then seen no wounded, God forgive me! I wished to see war, beautiful war, about which has sung every poet on earth, from Homer to Hugo, and my heart as a Frenchman was full of enthusiasm. In Trans-Siberia I recalled the great battles of old, the feats of arms of ancestors and heroes, and there came to my memory the verses about "epic battles," "heroic sounds," "steel striking steel," "the drums, the shells, the bombs, the cymbals."

Of all this, what remains to-day? The bombs, and they are shrapnel so perfect that their "heroic" sound is insignificant. What could our heroes, riddled with balls, do this morning? Burrow, as they did, and await Fate. Run, charge? Whither? Against whom? Against what? Charge against the rain, the snow, the wind? Now, at noon, the action diminishes in violence. Why? Because all are tired, and are breakfasting.

And I continued to soliloquize.

Yes, the histories of yore are becoming legends to-day. There is an end of the charges, the heroism, the bravery, the genius, which made a leader with a few men decide the victory by a bold movement or by a lucky folly. Now, when "drenched" with shrapnel, the "Old Guard" may as well "surrender," for it would serve to no good for it to die. It is all over with the

*Concluded from the July number of JOURNAL.

man-to-man, grand bayonet and cavalry charges, in which Frenchmen used to cover themselves with glory. In some future war it may happen that men and horses may again struggle in heaps, but during this Manchurian war nothing of the kind has occurred. There has been some sabering in a few villages taken by surprise, often at night, but usually as the *sotnias* approached the guns opened. The experiment has been tried, however. In their intoxication of courage, the Russians one day *charged a battery*; the Japanese, squatted in their trenches, awaited them in their machine-shop; an officer gave some orders, some one pulled the string which set in motion those instruments of precision—in five minutes the *sotnia* was wiped out.

War, such as I have before my eyes at this moment, is a factory of death—a factory in which roar the dynamos of the batteries, and in which goes on the butchery of men as one in Chicago may see the killing of hogs. At break of day, the clock—the first cannon-shot, Russian or Japanese, it does not matter which—announces the opening. The *day's work* begins. From his office-desk—and my eyes turn toward the hill where the general is at breakfast—the manager divides up the work among his subordinates. The factory is so vast, employing nearly two hundred thousand men, that he cannot see to all of it, and he remains in his office, giving orders to his secretaries, who bustle at the desk loaded with telephone apparatus or write out the despatches which the operator transmits.

It is a fine factory. Nothing is lacking. If a man has his arm taken off by the machinery, an ambulance, quick! They are waiting in the courtyard. And the food for these machines, which consume enormously, comes from every side, incessantly. Now there is overheating, for they are overworked. They work night and day. The relieving gangs are ready. Noon, one o'clock! The clock again. The men rest, eat a morsel in haste. Not all; for there are worthy workmen; some of them have agreed not to quit work—without any double pay!

With us, those who do not quit are they of the right wing, who maintain themselves with great difficulty on the mandarin road and in the plain of the west, as far as my glasses reach. It is hateful and exasperating. Over all that boundless extent the enemy's projectiles fall—fall without cessation * * *

a rain of iron, or, better expressed mechanically, a deluge from the pump. Distance lessens the trails of the shrapnel. I picture this field of battle, however, as an orchard, all white, all in blossom, in which the branches cannot be seen among the blossoms.

The Japanese advance irresistibly. Oh, how tragic were all those points of white, killing as they advanced slowly, foot by foot, without halt, in that great peaceful and solitary plain, where not a man was visible, under that grand sunlight, so pure, so serene, so bright! And I felt that one could not struggle against that wave.

Over yonder the work was going on, without free lunch, without double pay. All my soul, all I possess of admiration and respect, went out to those men giving themselves up without reservation to their bloody task. Without double pay! * * * Their boots torn, sleepless for days, eating scarcely at all—in such moments one is not hungry—dirty, savage, always firing at an enemy whom they could not hate, not knowing him, and of whom they could only know that he was yellow-skinned. Without double pay! * * * They are dying or are going to die, and they know it and accept it, through a spirit of discipline, submission and resignation.

One day, nine months ago, the Emperor said a word, wrote a few lines. And since that day Ivan Ivanovitch has been yonder, over plain or mountain, in heat or cold, always the same, foodless, in the mire, in the marsh—*nitchevo* (no matter!)—always jolly, always good and gentle, peacefully performing his duty with the same brave resignation, after eight months of retreat and withdrawals.

How well they can die, these brave fellows! Ivan, son of Ivan, whether he comes from the provinces of the Baltic, Little Russia, the Caucasus Siberia or the Trans-Baikal, be he Catholic, Orthodox or Israelite, he meets death where he is sent. And I recall the surprised tone of the officer who once told me of it. Russia, as everybody knows, is thoroughly anti-Semitic. There were sent to Manchuria Jewish soldiers, from whom nothing was expected, and they were fully equal to the others. * * *

The shrapnel rains. What are they thinking about, all those heroes in their trenches? The projectile comes from the end of the horizon. No one knows whence it comes. They hear it coming. They guess its deadly arrival. They see

nothing. Is it for you? for me? The unseen thing bursts, and twenty men are laid low! There will be no harvesting next season in half of a village, ten thousand miles away.

I have been six months in Manchuria, and had wearied of hearing so much slander, scandal, criticism, infamy, even. How far away that all is! How it all disappears! What matters it to me now that General X—— is an ass, General Y—— a drunkard and General Z—— a gambler or thief? At the end of my glasses unseen but imagined under the destroying shrapnel, there they all are—generals, private soldiers—all whose weaknesses, all their errors, are being redeemed and expiated in this hour of grand leveling, in the face of death—purifying death. What exasperation must be theirs, what rage of impotence. Oh, to fight, to charge, to do a soldier's work! But no. This is the factory, the finished product, sent out to the unknown purchaser, to the customers who did not ask for it.

If one could but plan: "I will do so and so, and such and such will happen!" Such plans may be possible in a European war, perhaps. The experiment has not been tried since our disasters in 1870. But in Manchuria! without accurate maps, in a country rotten with spies, in the midst of a people who will do anything for money, wherever it may come from, try to make plans, to agree ahead on some secret operation! Plans, as may always be found afterward in human acts, are forged in imagination. The battle ended: "Yes, he intended this, he intended that." But Stackelberg telegraphs the general-in-chief, "The staff map showed me a blank space instead of the mountains which rise before me," and I recall also the remark of Kuropatkin, which is only a touch from Palissy, "My course will depend on that of the enemy." The Japanese fire continues to grow less frequent. * * * They use now "brisants" especially. Slowly, methodically, they search the terrain, from which one of our batteries replies. They do not find it. They will not find it all day! I feel like clapping my hands each time I see their shot miss. They fire methodically, at regular intervals. I am too far away to hear them plainly. A little jet of flame, a little smoke, and, some seconds later, a dull detonation.

* * * * *

But the cannonade resumes its violence. It is about four o'clock. The Japanese on our right advance, advance;

already I must turn half around to bring my glasses on the Russian positions. In the center, our First Corps has retired a little; there the situation is about stationary. Farther to the right, the Fourth Siberian Corps has been forced from its first line, its advanced positions. And from the direction of General Stackelberg, not one shot. What can he be doing? The whole thing looks badly. I no longer expect to see Liao Yang and its beautiful Korean tower, encircled with a cloud of birds. An officer comes and asks us to leave the height; a battery is taking position on it. Already the guns are climbing. The horses strain against the steep slope. How beautiful all this, were it not war! I start in search of a farmhouse before night falls.

As usual, I find it and receive the same polite welcome. Forage is brought, and my horse devours it; poor beast, she has eaten nothing since yesterday! The streets of the village are crowded with troops. Truly, I would never have imagined that during a battle there would be so many troops * * * in the rear. I start out on foot to take some photographs. On my way, some soldiers force a door; they will take forcible lodging. A whole string of field ovens follows along. And suddenly some infantry debouches. They do not go to the south, toward the battle, but to the north, toward Mukden. What! Can it be? * * * I do not dare ask.

I return to the farmhouse. Dinner is ready. My *maïou* is already asleep. I lie down, but cannot sleep. Toward nine o'clock, too nervous to remain lying down, I go for a look at my horse. At the corner of the yard, a slight noise and low voices attract me. Some soldiers are trying to rob the woodpile. Like all Chinese houses, even the poorest, this one is surrounded by a mud wall. A head shows itself. I am seen. They disappear.

The night is full of stars. The cannonade does not cease. From time to time appear short flashes. Those are from the shrapnel. Always at work.

I try to sleep. But soon some soldiers come in. They fill the house. They also want shelter. And suddenly they notice me, become silent and constrained, and examine me. The whole light consists of a small pewter lamp, with a wick dipped in oil. They come up to me and talk.

I use my few words of Russian, point to myself, and say:

Fransouski. They answer "Yes" with their heads, say to me a heap of things I cannot understand, and their circle narrows. A vague uneasiness seizes me: What will become of my horse? I wish to go out. They think I am trying to escape, and several heavy hands fall on my shoulders. By chance, the lamp goes out at the same moment. They strengthen their grasp. I wait for my *mafou* to relight, as I direct him to do. The lamp relighted, I attempt explanations. A sergeant, very polite, smiling, full of good-humor, comes up; I repeat to him the few Russian phrases I know, and soon perceive it is vain to talk or act—he does not believe me. Resolved to finish it, I ask him, "*Offitsir?*"

That was what he wished. He is pleased that we are in accord—that is understood; we are going to find some officer. He makes me understand I can leave my things here, but I prefer to pack up and resaddle; I have such a good wrap and such a pretty aluminum cup. If they should lay hands on them they would be all right, after all.

My preparations are made in a few minutes. I settle with my trembling host, and, kept well in sight, I start forth into the yard, followed by my impassive and sardonic *mafou*. * * * I stop to take out a cigarette. I have lots of pockets, I search a moment for my case. When I withdraw my hand, one of the nearest soldiers jumps back. I show him it is not a revolver, but cigarettes I am taking out. His comrades joke him, we both laugh. I think of the nervousness of these men. They are ignorant. For days they have been "being killed." The Japanese devils have laid low so many of them, all around this fellow, and without his ever seeing them; all to him has become suspicious.

Here I am, then, raised to the rank of a spy—a spy in war, which honors me—and altogether, the horses following, we proceed towards a house fifty yards away. The yard is filled with soldiers and horses. A large room, lighted by a few candles stuck on the table. Two or three officers are gathered there. One is lying down, another writing, the third humming a Cossack air I know well, so sad! He grasps my hands, bidding me welcome. We traveled together from Irkutsk. I tell him my story. What he says makes the sergeant change color; humble and sorry he repeats often: "*Fransouski offitsir.*"

I also, unfortunately, am nervous and angry. And I refuse to go back to the house I came from. The officer tries in vain

to keep me. No! I shall stop in another village, and I call up my suspended decision to go to Mukden, where I wish to be at dawn to-morrow. So I set out. I soon regret this act of ill-humor.

* * * * *

The night was superb, and everything about me breathed such serenity, a calmness so peaceful! Boom! roared the cannon. "We are in war," its voice recalled. A horse's step draws near. I think of the Khoungouses. I have no revolver. I come abreast of the horseman, who recognizes me by the light of the moon. Another one with whom I have drunk champagne at Harbin. Oh, feast and massacre! We dismount and chat. I ask his general impression. Roughly, with an angry, tired voice, he cries out, "We are licked."

I did not know what to say, and in silence I looked at his worn features, his wrinkled face, his sunken eyes, where could be read days of privation and fighting. Then he resumed, as if happy to ease himself: "Oh, this war! And to think that no one ever sees those swine! Do you know how one must fight now? Like your Apaches—never let himself be seen, creep up craftily, treacherously, and shoot in the back. One must live on his knees, squat in the trenches, burrow like beasts, fire Heaven knows where, or remain motionless entire days, seeing comrades fall all about him. * * * And we Russians are not built for that."

And this criticism brings up to me the vision of our hills, where men and horses stood up, while opposite, with the enemy, we could hardly distinguish shadows creeping. That was at Tachitchao.

He gave me vague details of the general operations. He knew simply that the Army of the East had failed in its plan and was retiring slowly; that our right wing had not been able to resist a formidable attack; that the Japanese were continuing to advance toward the "gap," separating our center from our right; that they were pushing their troops on like the ax in the oak-tree.

He mounted heavily. "Good-by! Good-by!" I answered. He was killed a few days later.

The cannonade slackens and ceases entirely. It is about ten o'clock.

* * * * *

October 13th. The duel is resumed at six o'clock in the

morning. I start for Mukden. On my way, I pass the village of Loudian-foun (I write this name just as my *majou* seems to pronounce it), where the general staff now is. Again I see officers well pipe-clayed and white-gloved. Each time the same thought comes: "How strange it is! Here are those who know comfort and a certain camp luxury, while but a few miles distant are others with coats in tatters and covered with mire. Evidently, both are useful and necessary."

A storm is coming on. The rain soon falls in torrents. About noon I reach Mukden.

The horses unsaddled, I make an inspection. The two beasts have their shoes removed; one is wounded in the back. The good beasts shall have a day of rest! Several reasons keep me in Mukden. What more would I see in the fields?

The cannonade all day is terrific. The Japanese push forward their left continually. Their right has nothing to fear; it has just repulsed Stackelberg, and new troops are doubtless still going to reinforce their left, on the plains which the Russians believed so propitious for themselves.

I am going to the Russian quarter, near the station. The Japanese advance must now be considerable, the sound of the guns seems so near. I am overwhelmed with questions which I cannot answer. The truth is hard to tell. Some officers' wives are packing their trunks for Harbin. And I feel that the battle is lost. * * *

October 14th. The sound of the guns awoke me about three o'clock in the morning. About five I set out for headquarters at the village of Lou-dian-foun. All my life I shall remember that road, transformed into a morass, crowded with carts stuck in the mud.

At the end of an hour, I suddenly thought: "Why, how many officers, men and carts are going toward Mukden!" And I tried to read all those gloomy faces; I still wished to disbelieve. An unconquerable restraint held me from questioning. At last I recognized an officer, and went up to him. "There it is," said he in a tone he tried to make jesting, and, moving his arm from south to north, to point out the movement of all this mass; "Mukden!" In spite of the condition of the road I took up the trot toward the south.

At ten o'clock I was at headquarters. The roar of the guns was beyond description. In the lanes and on the road was the usual crowding, the same swarming. I came to a turn

of the road lined with houses. Over one of them floated the standard of the commanding general. Many officers, of every grade and of various uniform, waited about. The escort, in the saddle, with lances raised, stood ready. I wisely withdrew. "At such a time it is best not to be seen," I thought, and cast my glance toward a small hill near by, crowned by the trees of a temple, which my *mafou* called Quan-guatoun. I began to climb it slowly.

The undulating ground was covered with bivouacs and rows of tents. I suddenly heard behind me the form of salute in chorus. I turned and lifted my cap. General Kuropatkin was approaching. He returned my salute and made a polite gesture. "He is surely a wonder," thought I, my eyes following him. He is exactly the same man as my tourist of the tombs at Mukden, or the host of the car, who watched the march past, the other day. The same youthful, natural and simple carriage, the same calmness, the same strength, the same smiling features, marked by goodness and energy, the same total of *respectability*. I thought of all the difficulties of every kind he has had to overcome, the terrible responsibilities weighing upon him, and I remembered the saying of an officer one day at Liao Yang: "I went disheartened to see him; after ten minutes I had regained my calmness from him."

The climbing was steep and I had to dismount. Leading my horse I reached the summit and visited the temple. All of one wall hung over a ravine; two entrances, one in front, the other at the side, gave access to an interior court, where an old man with scanty and grizzled beard received us with his best smile, which cleft his toothless mouth. The small temple comprised only one large cool room, where some slight remains of incense made us lower our voices. Upon the altar was enthroned a Buddha, pot-bellied and serene; a number of images, big and little, some of porcelain, kept him company. On the walls beautiful paper pictures represented the tortures of the damned, or the usual landscape with the big tree leaning over the calm little lake, in which was mirrored the toy pagoda at the foot of the hill.

Outside, in a corner of the yard, a tree with yellowing leaves extended its branches; at each breath of wind there tumbled down innumerable beetles of every color—yellow, black, spotted, plain—my clothes were covered with them.

Our guns continued to fire, but alas! I understand quickly: all our effort now consists in holding back the invading tide of Japanese, to allow the Army of the East, so far away, to fall back on us. And I also understand why so many officers and vehicles are going toward Mukden: the order for a general retreat was given last evening. The Japanese are on the right bank of the Sha. Who will hold the river? What is the use of staying? I am disheartened by this scientific, mechanical, long-range killing. I will go back to Mukden.

Going back to headquarters I notice an odd, queer-looking apparatus, which had escaped my eye—a kind of iron turret, of slight construction, an Eiffel Tower, twelve feet high, surmounted by a broad paddle-wheel, turning with the wind and in big letters, *aro * * ** something, I do not know what ** * ** *Chicago*. "That's so," I muttered, discouraged, "war now is Chicago, St. Étienne, Fives-Lille, laboratories and factories."

On the way the rain recommenced. It was so violent that I sought shelter in a house of which only the roof and walls remained. Some soldiers were there, also waiting; I had coffee and brandy, which I gave to them; I wished I could give them everything.

Oh, that going back! the deep mud covering the roads crowded with Red Cross carts! Caissons and wagons follow one another, without any rest, in both senses; the water comes up to the axles; the heavy vehicles mire in spite of the desperate efforts of the horses, urged by the shouting of the men. In the soaked fields infantrymen pass by, many without rifles, with arm or head tied up with bandages. In an ambulance two young Sisters of the Red Cross are talking and laughing. What are they doing here, contrary to the orders of the commander-in-chief, who does not wish women on the battle-field? They have come to look on, and are laughing over their escapade!

A soldier is leading a restive ass, carrying a broken drum as his sole load.

Drawn by horses or by mules, without order, harnessed hurriedly, often six or seven animals to the same vehicle, heavy Chinese carts follow the train and bear the fortune of the family, all the property which has been saved. On top of the *gao-lian* is a pile of queer objects—cupboards, tables, ducks, pigs—and, perched on the summit, dejected women

cradling their children. About the vehicle march the men, often balancing at the two ends of a long pole two panniers, holding each a well-behaved baby.

They, too, were fleeing from war. Back of them the house is burning or pillaged; the doors and windows, everything of wood, has been carried off; the crop is lost; what else can they do but flee?

In the mud, lashed by the north wind from the deserts of Mongolia, under a stormy sky, Russians, Chinese, carts, guns, soldiers, well or wounded, freezing children, the whole tide is setting toward Mukden. Back over yonder, without a pause, squatted in their deep trenches, in their machine-shop, the Japanese are giving orders or working their instruments of precision, and their "drenching" goes on. I cross the branch of the railroad leading to *Fou-choun*. There stands a Red Cross camp, and I think, while pursuing my way, that I have in fact seen few wounded men, although the losses must be heavy. I hear myself called, and see at the door of a wagon one of the chiefs of the Red Cross. I confirm the bad news to him, and ask him if there are many casualties. "Yes," he answers with a grave face. "How many?" "More than fifty thousand." The figures astound me. I have been present during several days of battle, but I have not seen five hundred wounded men, while I hear of twenty thousand killed and thirty thousand wounded! The factory of death does its "fine work" in silence.

* * * * *

The 14th marked, practically, the end of the general action, which began on the 10th. It was on the 10th, indeed, the entire line was fully engaged, and on the 14th heavy fighting ceased. Let me be understood: the cannonade lasted five days longer, but without much result; the positions of the two adversaries remained practically unchanged. On the 15th the situation was stationary. And here, for me, begins the mystery.

Back in Paris, I have just read the official reports, of which I had no knowledge in Manchuria. Their perusal, instead of enlightening me, complicates the facts and perplexes me. I have shown how critical was the situation on the 14th. At Mukden, late in the night, I learned that the success of the Japanese counter-attack took on proportions disastrous to the Russian arms. A Japanese battalion was even said to have

penetrated between our right and our center, and General Kuropatkin was in danger of being turned and cut off.

What happened? The Russian reports tell us of reinforcements which might have stopped the enemy. The Japanese reports seem to indicate that they had beforehand limited their advance to the bank of the Sha. Now, on the one hand, if General Kuropatkin had been able to reinforce his right, his reserves were not by any means sufficient to definitely stop an enemy determined to profit by his advantages; on the other hand, I find it hard to believe that the Japanese were satisfied with the banks of the Sha, when Mukden offered, hardly fifteen versts away—Mukden, with its houses, its resources for wintering, its markets, its provisions. Had their advance continued, the evacuation of the city was most probable. For the Russian Army, cut off, flanked, would have had no time, I think, to prepare a serious defense of Mukden, in spite of the strong positions she possesses, I am told, on the south.

Where, too, were all these reinforcements of which the Russian reports tell? In those last days of fighting all the troops had made their supreme effort to the very last man. The exhaustion of the Japanese, exhaustion physical and total, and their lack of fresh troops and ammunition* would explain all, and much more comprehensibly. * * * But I would like to know! And I have never known. Perhaps we may know later, as about so many other things, but much later.

On the 15th, the situation remained without change. The cannonade was violent during the morning. Toward eleven o'clock it slackened, became infrequent and finally silent. The Russian outposts occupied the right bank of the Sha, the Japanese the left bank, and already, without loss of time, each began to dig, dig. After the battle of "drenching" came the battle of the spade.

I left Mukden and came to the little temple on the morning of the 16th. The artillery thundered without a stop. When about to climb the hill, I noticed an assemblage to my right, and went over there. Six men were pushing along a gun, the like of which I had not before seen—a nice little gun, on two wheels, in the muzzle of which was fastened a large stick. The men stopped every minute to answer repeated questions; it was looked over and felt of. What could it be? I went on up.

*During the 11th, 12th, 13th and 14th an average of 80,000 projectiles was fired by the Russians alone, I have been told. (The cost of one shrapnel is about \$5.)

Sitting on the steps of the temple, covered from top to bottom with animals of our good Lord (ladybugs), an officer posted me. Extending his arm, he showed me in front of us, on the left bank of the Sha, near the village of Loun-dzian-toun, a little hill, encircled by several others, a ridge of heights, short and isolated in the immense plain. A crooked tree made a plume leaning a little over on the side. There is "the Poutiloff Sopka."

The Russians originally occupied this height. The Japanese seized it on the night of the 14th-15th. On the morning of the 15th General Kuropatkin decided to retake it. It was drenched with shrapnel all day. About four o'clock the assault was ordered, but failed; the Russians passed the night on the slope, and received reinforcements from Stackelberg, whose retreat had been finally effected; twenty battalions of the Fifth and Ninth Divisions. At four o'clock in the morning of the 16th, the attack was resumed, this time in force. "It was horrible; a butchery! Our men were so wrought up by all these days of fighting that no quarter was given. In an hour, with the cold steel, it was all over. The five or six trenches dug by the Japanese overflowed with corpses. Barely one hundred and fifty prisoners were taken."

And he added: "They were no longer human beings, but wild animals. I saw a man of the Nineteenth Regiment, wounded in the hand. He had with all his strength plunged his bayonet into his adversary's body, but the impetus threw him on the half-dead Japanese; his hand by chance touched the mouth of the other, who sank his teeth into it. We took a dozen guns, a field-battery (the Japanese batteries are six-gun) and five mountain guns; and that is one of them you just saw down there—a pompom (Hotchkiss). * * *

"And your loss?"

He said merely, "I heard that out of one regiment two officers are left."

And I never could learn the exact loss. But, indeed, it was a revenge. The Russians at last had charged.

On the right, that terrible right, all appears so quiet now! I need only look over that vast extent to understand that the "Poutiloff" affair is but an incident—glorious, indeed, but without influence upon the final outcome—and, disheartened, I mutter, while going back to the plain, "Will not the Japanese recapture the *tree hill* to-night?"

Down in the village, the crowd grows about the guns, which I photograph from every side. A non-commissioned officer, without my asking, scatters all who might be in the way of my work. What big children!

I had business at headquarters, and entered the main room of a *fandza*. Several officers were conversing, consulting maps and drinking tea. Their faces had an appearance of joy. * * * I fell to writing.

The steps of men on the threshold made me raise my head. Escorted by two Russians, his right hand wrapped in bandages, a Japanese came in. His cloth robe was changed to trousers and blouse of khaki. He was about five feet four or five—a big Japanese. His broad shoulders, enormous hands, sturdy bearing, gave him the air of a wrestler, an athlete. His eyes were intelligent, hardly lowered; a constrained smile showed his white teeth. He saluted politely, took off his cap, and bowed several times. The officers looked at him, and felt of his clothing, he remaining impassive. A captain turned and began to speak, naturally in Russian; my gaze followed the direction, and I noticed for the first time a person in civilian clothes, of sickly complexion, prominent nose, and crafty and deceitful expression—a kind of sick owl, brought into the light of day. This was the interpreter, a mongrel of Pole and Japanese, I was told. The conversation began, and questions were asked of the big “Jap”—the number of his regiment, brigade, etc. He answered politely, in a calm voice, and took from his pocket a small square of paper, such as they all have, on which was written his name, his regiment, *in Russian*.

The interpreter translated with a tired voice.

“That is true;” said the examining and registering officer several times.

And the Japanese left the room.

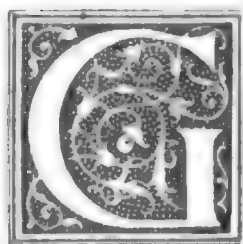
I started shortly after, and arrived late at Mukden. I was very hungry, and went to the officers’ restaurant wagon. I was the first to announce the taking of the “Poutiloff Sopka.” One officer remained skeptical. He rose and said to me on leaving, “That is to make up for the loss of fifty of our guns, the last few days.”

We have lost fifty guns! This is my first news of it. Ah, I truly forswear numbering effectives, estimating losses and

GIBRALTAR, THE KEY TO THE ORIENT.

TRANSLATED BY CAPTAIN A. S. ROWAN, NINETEENTH INFANTRY.*

(From *Por Esos Mundos*, for March, 1905.)



GIBRALTAR has always occupied a very important page in the history of nations. In time past, when it formed with the promontory of Abyla (to-day Sierra Bullones), the Pillars of Hercules, the Rock was considered the western limit of the world, and thence the nations of America among others took the design that characterizes their coinage—the two columns on a roll of parchment, with the inscription *Non Plus Ultra*. The daring Phenicians considered the Strait of Gibraltar the southern gate of the ocean, afterward converted into the gate to the Orient, when the genius of Ferdinand de Lesseps created the Suez Canal. To-day this strong rock resembles the image of an enormous lion, lying between the Atlantic and Mediterranean, sleeping to all appearances, but alert always and ready to make those who dare, pay dearly for their temerity.

For many years it was the custom to speak of Gibraltar as the most important fortress in the world, and literally speaking, the truth of this affirmation may be admitted; but the technical perspicacity that is conscious of its knowledge halts before accepting this statement now, for at Halifax, "The Gate to Canada," the English have constructed fortifications, utilizing the position of the port and of the strategical points that nature offers; such are the York and Spionkop redoubts, those on McNab and St. George Islands, Forts Cambridge, Ogilvie and Clarence and the Citadel. Comparing the value of the two positions it may be said that the Halifax batteries are sufficiently elevated to be impregnable to assault and to command twice the length of the enclosing

NOTE BY THE TRANSLATOR.

*As Gibraltar is a port of call for our Atlantic transports on the route New York—Manila, the following translation and illustrations from Spanish sources may be of interest to a large number of readers of the JOURNAL.

A recent number of a prominent Madrid monthly magazine (*Por Esos Mundos*) furnishes this account and as it gives an epitome of the history of the Rock and probably as much military information as is permitted to percolate through the not always impervious stratum of mystery it may be of added interest to military students.



lines, for which reasons the great altitude of the rock of Gibraltar is worth but little. The supply of water for Gibraltar is drawn from the rains only, while Halifax possesses beautiful and abundant springs. Finally, in the port of Halifax all the navies of the world could be anchored, while the bay of Gibraltar is but an insecure refuge. But taken all in all there is not on the globe an independent fortress that can be compared with this most important marine and military position.

The interest in all that relates to Gibraltar is great and increases each day, not only on account of international complications which may happen in the march of time, but the connected history of the rock through the conflicts that have taken place over it and around it, and through the great men that have fought in its attack and in its defense.

When the invasion of the Vandals broke the thread of history the northern column of the Pillars of Hercules disappeared from view and it was not spoken of again till the year of 711, in which Muza, the African viceroy of the Caliphate of Damascus sent a large force to Tangier, and an immense horde under the orders of the celebrated chief Tarik ben-Zeyad crossed the strait, disembarked on the west side of the bay at the point now occupied by Algeciras, and shortly afterward built the first fort upon the rock of Gibraltar, and to the opposite height he gave the name of Muza as a great honor to that chief. The rocky mass itself they baptized Gebel-al-Tarik, the name Gibraltar being the Spanish adaptation of the Moorish word.

The solid structures that Tarik built in 713 to 742 surpass the more modern works, as do also the Moorish castle that commands the present artillery barracks, the zig-zag wall that rises from the middle of the western side, the broken Tower of Homage and some other works of minor importance, now destroyed. Not during the tumultuous epoch of Moorish Spain when the Visigoth kingdom was overturned and Cordova fell into the hands of Mugith-ar-Rami; nor in the year 756 when Abd-er-Raman I, of the house of the Omayyades founded his own kingdom, nor when, in 1010 Mahomet II, commanding the troops of Suliman, assailed the country, does there appear to have been any alterations made in Gibraltar. But toward the year of 1148 a sect of Almoravides led by Abdel-

mimmin took possession of the fort and the Great Almohad greatly increased the strength of the structures.

Guzmán the Good took Gibraltar for Ferdinand IV, of Castile, guided by a Moorish boy who paid for this act with his life. In 1333 the Moors recovered the place and on the 20th of August, 1462, Guzmán, Duke of Medina-Sidonia, tried to capture it again for the Spaniards by a stroke with Castilian mountaineers, and in reward for this exploit the Rock and its northern part were granted to this noble with the title of baron. Thanks to the rulers of Castile they were withdrawn a century later. The Algerian pirate Khairadden, known as Barbarroja or Redbeard, appeared in front of the Rock in 1540 and so destroyed the defenses and the town that it was an easy thing to sack the city and effect a great massacre. Barbarroja destroyed all that he could and Carlos V engaged the celebrated military engineer Spreckel of Strasburg. A little later John Baptist Calvi, a Milanese, began new fortifications that extended from the south side of the city to the summit. So the rock of Gibraltar from its earliest times fell under the government of ten kingdoms, sometimes with the results that were intended and at other times with less favorable termination. The eleventh government of Gibraltar appears now to be very secure beneath the claws of the British lion; but if at any time it must pass into other hands the Spanish canon of Céuta and Algeciras will be called upon to decide the matter. What would result from a continuous bombardment by the great guns situated on the African and Spanish heights is a thing that those versed in the technique of artillery have theorized upon at length. Only a practicable test can decide.

The English seized the place with greater ease than any of their predecessors. During the war of the Spanish Succession the English Navy, under orders of Admiral George Rooke and Prince George of Hesse-Darmstadt, suddenly appeared in the bay surprising the small Spanish garrison. So great was the surprise that in a short time the British ensign floated from the heights of the rock for the first time. Shortly after the seizure of the rock of Gibraltar by the English, the combined forces of France and Spain laid siege to it and for six months the defenses resisted the bombardment and the attack of the Allies who used every means then known to the art of war to recover the place. When peace was de-

clared in 1713 Spain had to leave the rock in the hands of the English. Again this happened in the war that took place in 1727.

The last siege sustained by Gibraltar includes some unique particulars in the history of the world. It lasted four years and ended with the Peace of Versailles. During this siege a Frenchman named D'Arcon invented floating batteries that were supposed to be incombustible and unsinkable, but the English artillerists stationed on the walls destroyed them, knocking them to pieces. A Sergeant Ince, of the British artillery suggested the construction of subterranean galleries in the rock and this work was brought to a conclusion according to the plans drawn by Lieutenant Ewoleth. These galleries still exist. The hero of this siege was General Eliot, whose memory is preserved in Gibraltar by means of a monument erected on the Alameda.

Gibraltar played its part also in the memorable battle of Trafalgar. It was Nelson's base. At the entrance to the strait he defeated the combined squadrons of France and Spain, which were under the command respectively of Villeneuve and Gravina, on the 21st of October 1805, and many of the dead of that day were buried in a trench of earth near the great Southern Gate.

Considered geologically the Rock is of limestone of the *solite* system, extending from north to south with a length of three kilometers and a breadth of five hundred meters. The northern summit is called Monte del Cañón (1356 Spanish feet); the southern summit, Pilón de Azúcar (Sugar Loaf) crowned by the O'Hara Tower (1361 feet). Between the two mountains there is a rock on which is placed the signal station at an elevation of 1295 feet and between it and the summit of southern point is the highest point of all, 1396 feet. A narrow isthmus, low and sandy, unites the northern end of the rock with Spain. The eastern declivity is too steep for travel, and for this reason the population is grouped on the western side.

In the wet season a thick cloud envelopes the rock and when the sun shines the great mass exhales a vapor which scorches like the rocks with which the Hawaiians cook meat. For this reason the officers and soldiers in England dread to be selected for the garrison of Gibraltar.

It is a remarkable fact that on the eastern slope of the rock

there exists a tribe of Barbary monkey, extraordinarily large, the only savage monkey indigenous to Europe.

On the southeast side before reaching this point, where the ground is quite steep, is the camp headquarters of the governor, who at present is the general and defender of Lady-smith, Sir George White, who occupies it when he does not live in the palace in the center of the city on the western side of the Rock. Passing toward the north *via* the eastern side of the Rock the visitor sees the Barracks of Buena Vista, the naval hospital, Rosia Bay and the vineyards, and from this beautiful commanding mountain point can be seen the southern Barracks—a beautiful building, the new camp for military exercises (*parades*), the dyke and the arsenal.

This post is now the station of a fine squadron in which figure the best ships of Great Britain.

The city has 20,000 inhabitants and is garrisoned by 5000 men, who with 2500 that constitute the crew and other persons of the squadron, form a military population of about 8000 men.

An important bastion called Jumper is alongside the gardens of the Alameda and protect it. Those next the wall were built by Charles V. Next comes the place called the Great Parade, and on the coast the lighthouse of Bandera Rota whence Admiral Rooke embarked. At this point is found the foot of the Arab wall whose southern gate leads to the Prince Edward Gate ascending by the forbidden slope to the signal station.

At the north of the wall is the city with its casemated barracks directly under the larger end of the Moorish castle. On this site is found the carefully constructed defenses of the landing place and further on a high track of ground, now leveled and made dry by dykes whose gates can be opened to permit the sea to enter whenever this may be necessary for defensive purposes.

A group of houses is erected on the isthmus, and residents go there to take in the sea breezes during the hot season. The hippodrome is also there; also the Protestant, Catholic, Jewish and Moorish cemeteries, the orchards and the summer camp. Beyond all this, in the neutral zone (made so by the terms of Anglo-Spanish treaty) can be seen still the ruins of the ancient Spanish forts.

The city of Linea de Concepcion is situated at the north

of the neutral zone. The northern side of the rock is the steepest and most imposing and on it are placed the best and most powerful batteries for the land defense.

This part of the great rock is best known to visitors because of its magnificent view, it is the place most frequently selected for photographs. A notable part of the defenses of the north side is known by the name of Battery Windsor. With regard to what there may be in the superior heights of the rock, in the roads that lead to them forming ziz-zags crossing and recrossing the defiles and fissures, there are few persons who are in a position to speak publicly.

For a long time the public has been permitted to visit many batteries and galleries; but thousands of tons of large caliber cannon and innumerable rapid-fire guns have been drawn up, and are still being hoisted, but to the casual eye this is not observable.

Of the number of hidden passages, reservoirs of water and artillery magazines, only the major of engineers of the place and two or three other persons can tell; but nevertheless, all probability, within a few years all the works that are now being erected will disappear and will be replaced with something still better. In consequence of these reforms the artillery guns that to-day defend Gibraltar and of which, fortunately, they have not made more use than firing at a target will disappear.

The population of Gibraltar faithfully represents each one of the nationalities that have successively been masters of the rock. It is a cosmopolitan population. Here one sees the Tunis (Tarso?) black dealing in meat, the blood of the Phenicians in his veins notwithstanding his Parisian dress; the good looking and lean Tuscan youth whose ancestors aided in the colonization of Carthage; the Moor, who carries burdens, with his red cloak, yellow slippers, naked legs and his scarlet turban; the Spaniard with his pallid face and haughty mien, and lastly, the present feudal lord, the English soldier, with his red coat and neck burnt by the sun, shining his military boots. Neither does Gibraltar lack the Morocco Jew with his caftan and fez, nor the Spanish Jew with his air of astuteness (for this individual is in general contraband), nor the well-clothed and well-behaved American tourist; the black and shining Nubian, undoubtedly a fugitive from Tangier, and the small Japanese ostentatiously

clothed and always awake. Such are the elements that ordinarily are met with there, and such is the current of life that flows around the rock, not only at the present time, but according to what is affirmed by ancient writings, from times antedating the medieval epoch.

At present not only the large and commodious steamers of Great Britain from India and Australia reach Gibraltar, but also the ships that go from the Atlantic to the ports of the Mediterranean. This last circumstance has caused this port to figure in the plans of Americans who can enjoy taking a voyage of recreation in winter.

COMMENT BY TRANSLATOR.

When the Treaty of Paris was concluded at the end of the Spanish-American War the assertion was made that, since the Philippines Archipelago was to become ours by purchase, the Treaty Commissioners had not been happy in their geography. The Ladrone group had been investigated and what was thought to be the only island worth having had been secured for its latent properties as a coaling station. The other islands in that group and the Caroline group as well (which might have been had for the asking, and which it is thought might have been thrown in for good measure) were left as a swarm of flies in the Great South Sea to pester us in the future. Germany at once seized the opportunity and our chance was lost. Again, when the German fleet made its hurried voyage to Kaiochiau to close in on the outlet to the Yellow Sea several stops to coal at English ports had to be made. The more recent tragic voyage of Rojesvinsky's Russian fleet is an object lesson as to the absence of convenient coaling stations. Now, that we too have our Far Eastern possessions, the naval problem of how to reach them must necessarily be interesting.

If we use our larger Atlantic squadron we have the choice of three routes to the Orient, two of them unreasonably long, almost impossible, in fact, the third without a coaling station and very costly—the Suez route. The geographical position of Céuta is fully as advantageous as Gibraltar and is not necessary to Spain, and the southern Pillar of Hercules is stout enough to fly the starry ensign and be to us of incalculable value. Were we happy in our geography?

A. S. R.

CAMP VICARS, MINDANAO, P. I.,
July 4, 1905.

FIELD AND SIEGE OPERATIONS IN THE FAR EAST*

BY COLONEL WILLIAM R. LIVERMORE, U. S. A.

CORPS OF ENGINEERS.

IV.

PORT ARTHUR.



THE general character of the defenses of Port Arthur and of the methods of attack and defense are described briefly in the first article of this series. Before describing these works in detail and discussing the engineer and artillery features of the siege it is more convenient to follow the progress of events from the Battle of Nan-shan to the surrender of the fortress, and this is all that will be attempted in the present article.

After the battle of Nan-shan, May 26th, the Japanese took possession of the Kuang-tung Peninsula. Dalny was immediately occupied and became the base of operations of the Japanese in the peninsula, which was blockaded by the Japanese fleet, with its base at the Elliott Islands. The Russians retired slowly, falling back successively on lines of defense which had been hastily prepared; the first extending from Hsiao-ping-tao to the heights east of Shuang-tai-kou, the second from Ta-ku-shan to Feng-huang-chan and the shores of Pigeon Bay.

The third Japanese army under Nogi landed at Dalny, but made little progress until the 26th of June when, in connection with the fleet, it made the first great attack on the Russian position and in four or five days carried the heights of Pantao, Kensan, Wai-tou-shan, Shuang-ting-shan and Hsiao-ping-tao. On the 3d, 4th and 5th of July the Russians recaptured some of their former positions, but were unable to hold them.

For three more weeks the Japanese made no progress. On the 26th of July another combined attack was made and after four or five days the Russians were driven back to their second position, Wolf Hill was carried, and the Japanese, after a loss of 4,000 men occupied the line extending from a point south of Tu-cheng-tzu to the heights east of Ta-ku-shan, at a distance

*Continued from September Number of the JOURNAL

of about five miles from the harbor of Port Arthur. The loss of the Russians was about 1,000 men. As the fleet in the harbor was ready to go to sea, it is possible that the Russians did not attempt to hold their advanced positions. The siege may be said to begin from the last of July, nearly six months after the outbreak of hostilities, three months after the landing at Pitsewo, two months after the battle of Nan-shan, and one month after the fight for the first defensive position.

On the 22d day of June, the 9th of July and the 26th of July, the Russian fleet made sorties from the harbor. On the 7th the Japanese landed troops at Shang-tao-wan or Louisa Bay.

As in previous months, the first three weeks of August were spent in minor operations. On the 7th, at 4 P. M., Ta-ku-shan was bombarded by a section of siege artillery and the greater portion was carried at midnight in a heavy storm of wind and rain.

On the 8th the bombardment was renewed and the summit taken. On the 9th Hsiao-ku-shan was taken.

On August 10th was the great naval battle of the war. The Russian ships were ordered to make their way to Vladivostock. Encountering the Japanese fleet not far away they were ordered to follow the flag-ship. The rudder of the *Tsesarevich* was jammed by the long range fire of the Japanese. All the Russian ships were massed in an indescribable medley. A few escaped. Most of them returned to Port Arthur.

On the 14th of August the Japanese right column commenced operations during the night and succeeded in occupying the line from Kan-ta-shan to the heights west of Lui-chia-tun, but were unable to maintain it. On the 15th they occupied the heights south of Nien-pan-kon and northeast of Liao-tung-kon.

In advancing from Nan-shan to Port Arthur the Japanese had only to encounter such defensive works as the Russians had been able to improvise, but in August they were confronted by works of a more formidable character, and the problem of attack on a fortress armed with modern weapons was to be tested for the first time on a large scale. Since the introduction of high explosive shells of rapid fire and machine guns, of magazine rifles, search-lights, etc., European engineers had recognized the impossibility of an attack by the old method of parallels and approaches formed by digging a shallow trench

and throwing up a parapet in front; but soon after the introduction of high explosives General von Sauer, of the Bavarian artillery, and others on the Continent, maintained that after a long bombardment the defenders would be so demoralized and exhausted physically, mentally and morally that it would be possible for the attacking force to advance by rushes from one sheltered position to another and finally to carry the fortification by assault and preferably by making simultaneous attacks or feints on every side.

This school of artillerists and engineers had many followers in Europe. No other new method appeared to be as popular. It was admitted that the loss of life would be terrible, but it was held that the loss in a prolonged siege might be as great and that the delay and expense would make it more objectionable than an assault.

The Japanese had learned the art of war from the officers of Continental Europe, and the method by assault was especially adapted to their temper and to their religion. The fortifications were far inferior to complete and systematic permanent works and the disastrous failure of this first crucial attempt to revive the primitive method of assault has contributed to establish the science of military engineering on firmer foundations than ever before.

Although the fortifications of Port Arthur were in a state of fearful unreadiness at the beginning of the war, the Russians had profited by the delay of three months before the landing of the Japanese and the four months during which they had been contesting the ground inch by inch.

The assaults at the end of August are thus described by the correspondent on the spot:*

During the morning of August 19th the siege guns opened a desultory fire to find the ranges, and an entire division of infantry advanced and assaulted the Russian redoubts at the foot of Rihlung Mountain. The troops captured the trenches in front of the redoubts.

The operations began in earnest at daybreak on the 20th with a bombardment of the whole line of Russian forts. Battery after battery of Japanese artillery was unmasked, the Russians apparently being unable to locate them, for they replied spasmodically.

Under cover of the bombardment the Japanese infantry made a determined general advance against the Russians' first trenches, along the railroad in the center of the Shuishi Valley, and also from Shuishi village.

Six hundred yards south of the village the way into the city was

*N. Y. Times, November 4, 1904.

protected by four advance half-moon forts, in the form of a hollow square, open at the rear and connected by bomb-proof trenches and having a twenty-foot moat in front.

A desperate attempt was made by the Japanese during the afternoon to capture the strongest half-moon fort. The infantry charged, cut the entanglements, crossed the moat with scaling-ladders, stormed the fort and drove the Russians back. But the real strength of the defenders' position lay in the bomb-proof trenches extending south of the other half-moon forts. They were filled with troops and concealed machine guns, which poured a deadly hail of bullets into the Japanese and forced them to retire. At about the same time the Russians recaptured the trenches in front of the redoubt in advance of Rihlung Fort.

On the right flank the Russian line was forced back. One Japanese regiment worked up the east slope and another regiment made its way up the west slope of 174-Yards Hill, under the concentrated fire of the Russian artillery, and captured the fort at the point of the bayonet at noon. The fort and hill were strongly supported by bomb-proof trenches, loopholed and with sand-bag walls, and were armed with two four-inch guns, besides other guns.

The Japanese casualties were 1400. Three hundred and fifty Russians dead were left in the position.

At four o'clock in the afternoon, during the bombardment, a fort on the ridge east of Keekwan fort was struck by a Japanese shell and burst into flames, and the Russians who had garrisoned it retired back of the Chinese wall in the rear.

During the evening a division on the Japanese left flank cut the entanglements on the slope east of Keekwan Fort Hill, and before dawn on the 21st the central division of the Japanese gained the foot of East Panlung fort, called by the Japanese East Banjusan fort, and cut the entanglements, but were repulsed.

At daylight on August 21st all the Japanese batteries of the center division concentrated their fire on the Banjusan and Keekwan forts, but despite the artillery support the Japanese were driven out of East Keekwan fort by an attack of a massed body of Russians from the Chinese wall.

At eleven in the morning, without special orders, several companies of a regiment of the center division emerged from their trenches at the foot of East Banjusan fort, and in tens and twenties charged up the slope to the broken wall of the trench around the crest of the fortified hill, under cover of a splendid shrapnel practice from their field-batteries in the valley.

The Russians behind the wall and in the fort poured out a hail of rifle bullets, and machine and quick-firing guns belched forth on the intrepid Japanese.

Twice the latter were forced back till the slope was covered with bodies, but a third attempt was made, and a score of Japanese reached the broken wall. The terrible fire of the Russians, however, started their retirement.

Suddenly, a Japanese officer, regardless of the danger, stood up, called out an order, planted his regimental flag on the wall, and was immediately riddled with bullets.

The effect on the Japanese of this sacrifice was instantaneous. The retreating infantrymen stopped in their tracks, hesitated, and then charged back, fought like demons, jumped over the wall,

charged the Russians with bayonets, and forced many of them up the glacis, over the ramparts and into the fort.

The fact that they had reached the corner wall on the dead ground enabled the Japanese to hold on, though the entire Russian fire was concentrated on that point for six hours.

The Japanese were reinforced from time to time by rushes made by their comrades up the deathway from the trenches, and they stubbornly held the corner wall and a small section of the Russian trenches till five o'clock, when two companies of another regiment worked through the trenches and attacked the West Banjusan fort, the magazine of which had been blown up by a shell a short time before.

Taking advantage of a diversion of the Russian fire, the Japanese attacking the first fort forced the Russians back, captured the fort at the point of the bayonet, and pursued the Russians along the connecting trenches to the Chinese wall. The West Banjusan fort was captured at seven o'clock after a slight resistance, the Japanese being unable to occupy it, as the magazine was blown up, but they held the trench line around the crest.

In the afternoon three battalions of Japanese reserves were added to the center division, and during the night a regiment left the division and assaulted and captured part of South Keekwan fort, and a feint attack was made at the foot of Urh Mountain in order to divert the Russians' attention from the massing of troops in the valley in front of the Banjusan forts.

Four field-guns and four machine guns were mounted in the East Bansujan fort and six field-guns and four machine guns in the West Bansujan fort.

At daylight the Russians concentrated their shrapnel fire on the captured forts, and the Japanese south of Keekwan were ejected from their positions.

The Russians, anticipating an assault, made a strong counter attack. The Japanese advance lines were driven from the forts, and were furiously attacked by large bodies of Russians, who also worked down on either side of the captured Banjusan forts to the valley, in an attempt to cut off the retreat of the Japanese from the two forts.

The Russians' move was cleverly planned, and their artillery commanders were well informed, for they opened fire with shrapnel on the advance of the Japanese supports across the valley, using starlights and search-lights with good effect in the counter attack on the Japanese forces.

A general assault then began, and for twenty minutes the whole Japanese line was engaged. The left division, from the trenches in front of the Keekwan forts, charged the fortified hills.

Part of the advance had gained the crests and shouted "Banzai!" when their triumph was cut short. Suddenly the two powerful search-lights of the east forts lighted up the Japanese lines, and Russian rifles and machine guns poured a deadly hail into the clearly visible ranks of the attacking troops. Despite the awful process of unequal annihilation, the Japanese stubbornly held the positions gained, and their machine guns quickly located and quieted the Russian quick-firers.

Finally the Japanese were slowly forced down the slopes to the trenches below.

On the west flank the search-lights of Etse and Talyangkow forts played along the Japanese trenches, preventing the movement of .

troops. The Japanese artillerymen concentrated their fire on the search-lights, shells continually blanketing the lights.

Suddenly the light of Etse fort disappeared, and the light of Talyangkow fort followed. The Japanese infantry on the right flank advanced on the trenches close to the Russian lines, when the Etse light was flashed out in the faces of the advancing troops and Russian machine guns, previously well placed, swept their fire along the lines, while rifles blazed with a continual rattle. As the Japanese machine guns came into action they were located by the Russian starlights, and were made more distinctly visible by the search-lights, but they silenced the Russian quick-firers.

In the meantime the fight was fiercest in the center of the Shuishi Valley. The Japanese again captured the Banjusan forts, outflanking the Russian forces, and slowly forcing their lines back to the foot of the fortified hills. The Japanese were well supported, rushed forward furiously and engaged the Russians, who had gained the valley in an attempt to outflank the forts.

Though the Japanese plan of attack was destroyed by the Russian counter-attack, the Japanese fought with splendid determination. Slowly the Russians were driven back up the slopes, fighting desperately with rifles. The Russian machine guns were used with great effect when the Japanese lines were lighted up by the search-lights, while the fort guns pounded the valley. The Japanese artillery was unable to fire at this point, as the Japanese forces were mixed.

The skilful working of the Russian starlights and search-lights was utterly unexpected and bewildering. They never failed to locate the Japanese lines, which offered splendid marks for the Russian rifles and machine guns, and rendered the Japanese machine guns of little use, as they were located and silenced by quick-firers before they could do any execution. The Russians along the whole line fought in the blackest darkness, and the Japanese with the most dazzling light in their faces.

The fight lasted continuously for six hours, till dawn, when the outflankers were forced back over the captured fortified hills, followed by the Japanese, who, despite the fire of the forts, captured them and joined their force from the valley. As the Russian outflankers were driven in Keekwan Fort fired.

Before dawn on August 22d (24th?) the center division made a third attempt to capture the higher fortified ridge of Ash Hill, the new Banjusan forts, on the higher ridge, and the rear forts. The Banjusan forts were stormed and captured, the Japanese pursuing the Russians who had defended them.

With daylight the Japanese artillery started a terrific bombardment. Every gun from the extreme Japanese left to the center concentrated its fire on the eastern end of the fortified ridge.

The storm of bursting shells lasted for half an hour, during which time the awful, concentrated fire swept the bridge from end to end. Over 400 guns roared in rapid succession, until the entire ridge was enveloped in a cloud of smoke. For a time every Russian fort was silenced.

When the smoke cleared away it was seen that the left division had advanced through the captured forts. One regiment attacked the East Keekwan fort, but was repulsed. Another regiment advanced up the northeast slopes of Wantai Hill in an effort to effect a

junction with the regiment which held the neck between the two peaks.

A center supporting regiment was unable to scale the heights, and was forced to intrench at the foot.

During the night of the 24th the ranks of the Japanese were so decimated by the furious shrapnel fire of the Russians that they were forced to retire to the valley below the captured forts, and what might have been a successful general assault with the capture of the fortified ridge east of Port Arthur was converted by the Russian tactics into a repulse.

The bombardment at the close of the night's fighting was magnificently conceived. The artillery practice was beyond criticism, and the spectacle was splendid and appalling, though the amount of damage done to the forts was doubtful.

The Japanese casualties from the 19th to the 24th were 14,000. The center division alone lost 6000, and a single regiment lost 2500. Only six officers and 200 men of this regiment were left after the fight.

The retention of the Banjusan forts gave the Japanese a foothold on the fortified ridge as a result of their six days of general assault.

For two weeks the Russians were unceasing in their efforts to recapture the Banjusan Forts. They bombarded and assaulted by day the bombproofs and trenches, which the Japanese repaired by night. There were 500 men and four machine guns in each fort. The field guns which were first mounted in the forts were removed. Though the Japanese resorted to unoccupied decoy trenches and bomb-proofs, the daily loss was 100 in each fort until September 8., when the Russians ceased their continuous efforts to recapture the forts.

The total loss of the Japanese in all three assaults in August is now estimated at 25,000.

After this crucial test of General von Sauer's method the Japanese settled down to regular siege operations. It is said that a transport loaded with siege guns and engineer outfit had been sunk by the Russians early in the war, but by September 1st the necessary material was ready to begin the attack by approaches. The exact position of the parallels and zig-zags is not known, but Richard Barry, an eye-witness, says that the first parallel was about 1000 yards from the Russian lines and that the second parallel was at the foot of the fortified slopes. The trenches were made six feet in depth and without parapets in front where the nature of the ground permitted, and the earth was carted to the rear probably over a very narrow gauge tram like a Cuban sugar railway, but smaller. The Japanese were good diggers, but appear to have made no use of mechanical excavators operated by electricity, compressed air or otherwise, and their rate of progress has been estimated at about six or eight meters per day. It was essential that the trenches should be not only invulnerable, but also invisible from the Russian positions. Barry's description of the manner

in which they effected this by roofing and masking them has been quoted in a former article of this series.*

The irregular surface of the foreground at Port Arthur enabled the approach to be made at places over ground invisible to the Russians.

Where the nature of the ground did not permit the excavation of deep trenches, sand bags had to be employed for cover and at close quarters regular mining galleries were of course required as usual.

September 9th the Japanese report:†

The tunneled passage leading to the Kuropatkin fort north of Lung-yen had already reached fifty meters in front of the fort, and the passages toward the Tung-chi-knan-shan fort, and the North fort of Tung-chi-knan-shan about 300 or 400 meters. *September 11th.*—The sapping operations in various directions had progressed more and more satisfactorily, those leading to the forts south of Shui-Shi-ying having approached to within about seventy meters in front of the enemy's fort. * * * *September 12.*—According to the reports from places of observation as well as the balloon corps, it appeared that the enemy at Tung-chi-knan-shan fort was cutting a tunnelled passage toward the East fort of Pan-lung shan * * * *September 19.*—At about one P. M., the army opened fire with siege and naval guns. From about six P. M. our gun fire was directed against a fort north of Lung-yen (Kuropatkin fort), the forts south of Shui-shi-ying, a highland southeast of a 174-meter eminence and a 203-meter eminence."

Whether from some psychological or physical motive, or to aid the military student in following the events of the siege, the Japanese appear to have marked the last days of every month from the battle of Nan-shan to the bitter end by a general assault with its attendant carnage.

September 20th.—Since last night the army has been continuously engaged with the enemy, and at dawn took the Kuropatkin fort. Between 9.45 A. M. and 11.45 A. M., the army also occupied the group of forts in the south of Shin-shi-ying. At 6.30 P. M. the army took possession of two forts on the highland southeast of a 174-meter eminence, and inflicted heavy losses on the retreating enemy. Our troops charged the forts on 203-meter eminence from three sides, namely, east, west and north. At about 8 P. M., one company of our troops reached the northwestern corner of the eminence, where our force constructed a base, with the object of occupying the whole of the eminence. *September 21st.*—Having been reinforced by several hundred troops, the enemy, on 203-meter eminence, offered a stubborn resistance, but our troops still maintained their position at the northwestern corner and continuously attacked the enemy, the fighting being of the fiercest description. *Sep-*

*JOURNAL MILITARY SERVICE INSTITUTION. May-June, 1905. Vol. 36, No. 135. p. 438

†The Russo-Japanese War. Kinkodo Co., Tokio. Vol. 6. pp. 700.

September 22d.—Our troops occupied the northwestern corner of the 203-meter eminence, fought desperately day and night, throwing explosives with the object of driving the enemy out of the fort. Having found it impossible to maintain their position for a long time, they discontinued operations at about six P. M., and returned to their former position. *September 25th.*—From 8.30 P. M., the enemy in the forts in the neighborhood of Ehr-lung-shan concentrated his gun fire upon our tunnelled passages to the fort east of Ehr-lung-shan. At the same time about thirty Russians, under cover of the rifle fire of about 100 of their comrades, made a sortie and encountered our troops in hand-to-hand fighting, lasting some thirty minutes. The enemy then retired.

The Japanese losses in these attacks has been estimated at 4000.

Throughout all the operations in September the Russians made sorties by day and night which materially retarded the advance of the Japanese. The siege guns and the eleven-inch howitzers now began to fire with some effect on the vessels in the harbor as well as upon the fortifications.

During the first week of October the bombardment and siege operations progressed as usual; one of the Russian search lights was destroyed by Japanese gun fire. Lung-yen was occupied October 11th and the Japanese constructed a foremost position at a point 200 meters farther to the front. Near this point were reservoirs that supplied Port Arthur with drinking water.

To prepare the way for the next great assault, which according to Japanese chronology must be made at the end of October, a few advanced positions must be taken. The outwork of Hachimaki-yama stood between Erh-lung-shan (or Nilusan) and the west fort of Banjushan, and the Russian trench at the foot of Nilusan was separated from that of the Japanese by about thirty yards.* From 2 P. M. to 4.30 P. M. October 15th (or 16th?) these works were bombarded by the eleven-inch howitzers, by the naval guns and field-artillery, the latter firing shrapnel over the positions in the last half-hour of the bombardment. "Wherever one of the big shells struck, it sent up an enormous column of black smoke, from out of which would fly in all directions fragments and segments of the shell, large rocks, broken pieces of timber, sand-bags and refuse of every kind, and when the smoke had cleared a heap of rubbish marked the spot where there had formerly been a trench." At 4.30 P. M. a battalion was sent up the hill, advancing at a walk with

**London Times*, January 3, 1905.

bayonets fixed. The Russians had evacuated the position and the Japanese who had realized that it was commanded by the works in the rear poured oil over the wood work and set it on fire. At the same time the Japanese in the trench at the foot of Erh-lung-shan charged and carried the Russian trench thirty yards distant and manned by forty Russians.

The gorge of Hachimakiyama was still held by the Russians. On the 19th the Japanese report that their trenches directed to Erh-lung-shan and the north fort of Tung-chi-kuan-shan having approached quite close to the enemy's positions they were subject to assiduous obstruction from the enemy by day and night. On the 23d the Russians at Ehr-lung-shan fired explosives from wooden guns against the Japanese in the trenches. The trenches directed to the north fort of Tung-chi-kuan-shan had approached within fifty meters of the fort. October 24th. The trenches directed to Erh-lung-shan had approached within about fifty meters of the fort. The Japanese also reported "that the enemy had been pushing a tunnelled passage toward them from the north fort of Tung-chi-kuan-shan. About 9 P. M. they caused an explosion at the head of our tunnelled passage, but we sustained no casualties. This night the enemy shot at us two heads of fish torpedoes from Erh-lung-shan."

On October 25th it was announced that on the following day the general bombardment along the whole line would begin at 9 o'clock in the morning and would continue up to the morning of the 30th, when an assault would be made simultaneously against all the works sapped up to during the past month. The Japanese report:

October 26th.—From 8.30 A. M. our siege guns of large caliber and naval guns opened fire mainly on the Tung-shu-shan fort, Ehr-lung-shan fort, Tung-chi-kuan-shan fort and the north fort on the same hill, the forts being struck no less than 250 times. * * * From two P. M. other batteries of our siege guns fired on the skirmishers' trenches on the glacis front of the Tung-shu-shan and Erh-lung-shan forts, and the trenches in the south of Hachimaki-yama, and inflicted on the enemy severe losses.

At 5 P. M. the Japanese carried the trenches in front of Lung-shu-shan and a portion of the center of the trenches on Erh-lung-shan and in the south of Hachimaki-yama. The Russians then concentrated a heavy fire on these trenches, but the Japanese held their ground. The Russians also exploded a large mine on the glacis of Erh-lung-shan, but with little

effect. The bombardment of the forts was kept up all night and the following day, October 27th, destroying parapets, dismantling guns and obstructing repairs. On the 27th the naval guns also bombarded Tzu-shan and An-tzu-shan, the arsenals and ships in the harbor. The engineers destroyed a "projecting corner" of the north fort of Tung-chi-kuan-shan. On the 28th the bombardment continued and was extended to 203-Meter Hill; a magazine was exploded in the north fort of Tung-intensity. The approaches to Erh-lung-shan reached the "outer embankment, a portion of which was duly exploded and destroyed by our force."

Another explosion made a big breach in the north fort of Tung-chi-kuan-shan. The magazine at Si-yang-kow was exploded.

On October 30th the bombardment began early in the morning. At 1 P. M. a general advance began. The advanced trenches of Sung-lung-shan and North Tung-chi-kuan-shan were occupied. At 1 P. M. Fort "P," between Pan-lung-shan and the north fort of Tung-chi-kuan-shan was carried by the Japanese, who were driven out again at 10.30 P. M. But Major-General Ichinohe, personally commanding his troops in the trenches, recaptured the fort at 11 P. M. At 1.05 P. M. a Russian fort to the northwest of Tung-chi-kuan was captured. October 31st the Japanese effected a lodgment on the glacis of North Tung-chi-kuan-shan, from which they started mining operations against the fort. The loss of the Japanese in these assaults is estimated at 13,000. Aided by the tremendous fire of guns of all calibers the Japanese had occupied a few advanced trenches and outworks of the Russians.

The first half of the next month was as usual comparatively uneventful. On the 26th as usual the great assault was made and after a few days some advanced positions were taken in front of the forts on the northern and eastern fronts.

At 1 P. M., November 27th, the Japanese concentrated a heavy fire on the parapets of Red Hill, 300 meters south of High Hill (203-Metre Hill).*

After that the infantry, advancing in widely extended order from Kin-kia-Tun and Su-kia-Tun, reached charging distance. Four consecutive charges were delivered between 3 and 4 o'clock. The fourth succeeded, but during the night the Russians made three counter-attacks, the third of which was specially furious, and drove out the Japanese.

*N. Y. Times. December 5, 1904.

On the morning of the 28th the Japanese, instead of advancing via Red Hill, made a direct move on High Hill. The attack began at daylight and was continued with desperate resolution.

The Japanese, advancing into the valley between Red and High Hills, received the fire from both forts and were decimated, but, sweeping on, they stormed the slopes of High Hill and captured the southeast corner of the northern face.

Meanwhile another force effected a lodgment near the parapet on the southwest face. These operations were very costly, both sides throwing numerous grenades down.

On the 29th the Russians made a furious counter-attack, bore back the Japanese from the southeast corner, and swept them down into the valley between Red and High Hills. They also partially dislodged the Japanese from the southwest face. The Japanese, however, clung to the trenches thirty meters below the crest.

Strong Japanese reserves were now brought up, and when these reached the fighting line at dawn on the 30th the attack was renewed against the southwest face.

Through the whole forenoon the fighting was continuous, but the Russians gave no sign of yielding.

In the meanwhile the Japanese artillery had found the exact range, and early in the afternoon poured on the southwest angle shells which mowed down the defenders, the Japanese ships also aiding with an indirect fire from Pigeon Bay.

At 5 P. M. the Russians showed clear signs of weakening. The Japanese made a renewed rush from the trenches on the southwest corner, but the Russians did not move. The casualties among the assailants were heavy.

At this critical moment reserves were poured into the Japanese fighting line, and with shouts which rang over the whole of Port Arthur, the assailants hurled themselves repeatedly against the Russians, who finally, at 7.30 P. M., broke into groups of twenty or thirty and retired sullenly.

Almost simultaneously the assailants at the southeast angle pushed home their attack, and the whole fortress was occupied at 8 P. M.

After this Red Hill was carried easily, but the same night the Russians, whose large reinforcements, summoned by telephone, had arrived just too late, delivered six desperate counter-attacks, the sixth of which continued till 4 A. M.

Till noon on December 1 the Russians repeatedly closed up to bayonet distance, and there was a series of hand-to-hand struggles, the assailants falling back and again advancing.

Finally, after terrible losses, the Russians retired to Antsz-Shan and Este-Shan, leaving the Japanese in assured possession.

The capture of High Hill is regarded as very important, as the Russian ships are now exposed to a direct fire.

It was not necessary for the Japanese to mount guns on High Hill, but the observer on its summit watched the fall of the shells from the batteries that were concealed in the hollows and behind the hills, and telephoned how far the shot fell to the right or left, before or behind the target. The observer himself was protected by a parapet, and took his observations

with a hyposcope or broken tube spy-glass. Eventually all the Russian ships were sunk in the harbor except the Sevastopol, which was sunk outside.

After the capture of 203-Meter Hill the Russians were unable to hold the positions in its immediate neighborhood, but no serious attempt was made to dislodge the Japanese by concentrated fire from Ta-yang-kou, I-tzu-shan and An-tzu-shan, evidently from lack of ammunition.

At 2.15 P. M. on the 18th of December a mine was exploded under the parapet of the north fort of Tung-chi-kuan-shan. The Japanese charged, but were for a time checked by the fire of machine guns. After a severe fight with hand grenades they carried the fort at 11.50 P. M. Defensive works were at once constructed. The Russians in retreating exploded four subterranean mines laid in the neighborhood of the gorges. On the 22d the Japanese bombarded the forts of Lung-shu-shan and Erh-lung-shan and "H" fort, also the defensive works of Hon-yang-shu-kou, which were captured on the 23d. The Russians fired from the Ta-yang-kou and Yo-hu-tsui forts and made a counter attack on Hon-yang-shu-kou which was repulsed.

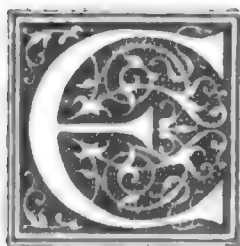
To celebrate the last days of the seventh month after the Battle of Nan Shan, on the 28th of December the Japanese exploded five mines from five galleries under the front parapets of the Erh-lung-shan fort and captured them at 10 A. M., and entrenched under the protection of their heavy guns and field-artillery, and then advanced and captured the entire fort at 7.30 P. M. The fort at Pai-ying-shan was also blown up and carried on the same day.

December 31st. The parapets Sung-shu-shan fort were blown up and occupied at 11 A. M. Then the Russians immediately exploded the fougasses laid in the inner part of the fort. The Russians in a caponiere in the gorge were buried under the débris caused by the explosions. Those in another caponiere were taken prisoners, the rest of the garrison escaped. A portion of the old Chinese wall near East Panlungshan was also blown up.

January 1st, at dawn, a breach was made in this wall in front of Wangtai. At 7 A. M. the Japanese captured "H" Fort and then the new fort of Pan-lung-shan, so that they held all the line from "H" Fort to Ehr-lung-shan. At 3.35 P. M.,

DESCRIPTIVE, MILITARY RECORD AND ACCOUNT BOOK FOR ORGANIZATIONS OF THE MILITARY SERVICE.

BY CAPTAIN HOWARD R. HICKOK, U. S. ARMY,
FIFTEENTH CAVALRY.



Each man is assigned a sheet on which is entered in tabular form everything pertaining to him. These sheets are held in a book cover having a suitable binding device, which permits opening at any page and exposes the page flat for entries and inspection. The sheets are arranged alphabetically and separated by thumb indices, thus being self-indexing. The binding device admits introducing a new sheet at any point or removing one therefrom without disturbing any of the others. The "Active Record" book will contain the sheets of only those men who are at that time members of the organization. The sheets of men whose connection with the organization is severed are transferred to a "Retained Record" book similar in character to the "Active Record." The "Active Record" of a troop of sixty-five (65) men will measure $1\frac{1}{4} \times 9\frac{1}{2} \times 11$ inches and will weigh three pounds, two ounces.

Object.—The object of this system is to replace the old "Descriptive Book" and "Clothing Book" and the more recent paper-boxes and loose leaf "Descriptive List."

Objections to Previous and Present Systems.—The "Descriptive Book" weighs six pounds, six ounces. The "Clothing Book" weighs ten pounds, seven ounces. If perchance an old book is not quite closed up, part of the records being in the new book, the weight of the books containing the troop records and accounts of individual men is doubled, being thirty-three pounds, ten ounces, to carry which on field-service or on any change of station, particularly insular and transoceanic, is practically prohibitive, both in weight and bulk.

These books, designed to fill the requirements of many years ago, now contain many features that necessity no longer

[illegible][illegible]

of

of

Age.	Height.	Complexion.	Eyes.	Hair	Mus or Sing.
yrs	ft. ins.				
Where Born.		Residence		Occupation.	

Nearest relative, relationship, and address :.....

When	Where	By Whom.	Period.
			years.

Joined..... 190 , at.....

[illegible]

Entitled to re-enlisted pay :

Where.	Date of Arrival Therein.	Date of Departure Therefrom

[illegible][illegible]

DESCRIPTION, MILITARY RECORD, AND ACCOUNTS

of
of

On SICK REPORT.

[illegible]

WOUNDS or other injuries received in service :

VACCINATION. Date, ..., 190, Successful.

BATTLES, CAMPAIGNS, EXPEDITIONS, etc:

MEDAL of HONOR, CERTIFICATE of MERIT: For.....

PER ~~dated~~ 199

MARKSMANSHIP or GUNNERY:

ALLOTMENT.

Allotment of \$ per month for months, beginning with
 month of , 190 , collected to include
 , 190 Still in force.

REMARKS.

[illegible]

REMARKS, continued.

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

FINAL ACCOUNTS

DESERTED DIED DISCHARGED RETIRED TRANSFERRED
 at....., on..... 190 ,
 as a....., to....., DET.....

CHARACTER:

SERVICE: HONEST and FAITHFUL.

OBJECTIONS to RE-ENLISTMENT:

PHYSICAL CONDITION ON DISCHARGE: GOOD. BAD.

FINAL STATEMENTS: GIVEN. NOT GIVEN.

LAST PAID by Paymaster.....to include
.....190 , and has pay due from that date
to.....190

ENTITLED TO TRAVEL PAY.

DUE SOLDIER.

For DEPOSITS, as per record on other side,		
For CLOTHING, not drawn in kind,		
For ADDITIONAL PAY, for		
For		

DUE UNITED STATES.

For CLOTHING, overdrawn in kind,	
For ORDNANCE,	
For QUARTERMASTER SUPPLIES,	
For SENTENCE COURT-MARTIAL,	
For POST EXCHANGE at	
For	
For	
For	
For	

I certify the above is a complete record and correct state of accounts of this Soldier to date.

Captain, ... Regiment of
 Commanding..... "....."

requires and which present conditions render obsolete, besides not possessing others which recent conditions of the service render necessary.

The sheets recently adopted by the General Staff do not contain several features which ready reference and accuracy of record make desirable. They are kept loosely in a paste-board box. The box will quickly get broken up and will not securely hold the sheets for any great length of time, particularly if subject to such usage as field-service or changing station would require. Tin boxes are equally objectionable.

Independently of the character of the box in which held, the very nature of the system will induce loss of the records. To replace a lost record requires considerable trouble, and most probably all the numerous items of the record could not again be collated.

Advantages of Proposed System.—Compactness, ready reference both as to names and subject matter of each, absence of superfluous matter and permanence of preservation. Tabulation enforces uniformity of entry, which insures accurate, quick and ready reference. This eliminates a heterogeneous mixture of items, none of which have probably been entered uniformly as to sequence of fact, date, order, authority, etc. These tabulations enable a man's record for any particular (as, for example courtmartial or sick report) to be determined at once without the necessity of searching through a long list of "Remarks," few of which bear on the item for which search is being made. Further, with a tabular system, there is more probability that a record will be correctly entered and that no part of it will be omitted, and also, that when search is being made for a part of a man's record all will be found.

Cover and Binding Device.—The "Loose-leaf" system with its suitable cover and binding device is a matter of fact whose value has been established. Already this system has been adopted for target records. There are, however, many forms of binding devices, some of which cannot be recommended from the standpoint of utility. The device must possess simplicity, strength, durability, devoid of injury to the record, permitting of a record being introduced at or taken from any part of the book without disturbing any other, and must permit the book to be opened flat similarly to an ordinarily bound book, for the purposes of entries and in-

spection. There are several covers of this description now used commercially. The cover submitted with this system fulfills the conditions named. That used with target records does not fully meet all conditions.

Grouping of Subject Matter.—The space available has to a certain extent determined the arrangement of the subject matter. The name to which a sheet pertains is placed in the upper right and left-hand corners, respectively, of the front and back, for ready finding. The man's grade is omitted at the heading, due to the changes that may occur during his enlistment. The spacing between horizontal lines is that of a "Descriptive and Assignment Card of Recruit," which time and experience has evolved and proven satisfactorily.

Clothing Account.—In "Clothing Account" the name of the issuing officer and the signatures of the man and the witnessing officer are omitted, as being no longer necessary. These names and signatures are relics of the days when clothing schedules, which contain these features, were submitted as vouchers to property returns. As these schedules are now retained in the organization to which a man belongs, any question as to the issue can be determined by reference to the schedule, and the necessity of repeating the signatures does not appear.

Size and Material.—The size of the sheet selected is that of a sheet of official letter paper, being convenient for handling as well as transmission. The sheets used in the holder should be of strong material, due to the frequent use required of them, while a sheet used to accompany a man transferred could properly be lighter. A form the size of the present "Descriptive List" was ruled out, but was decided to be too bulky and to contain too much superfluous space.

FORT ETHAN ALLEN, VERMONT.

August 7, 1905.

TYPES AND TRADITIONS OF THE OLD ARMY.

WITH THE THIRTEENTH INFANTRY IN DAKOTA

BY BRIGADIER-GENERAL WILLIAM M. WHERRY, U. S. ARMY.

THE Thirteenth United States Infantry was rendezvoused at Jefferson Barracks, Mo., in the winter of 1865-6, reorganizing for service on the plains against the Indians. At that time it comprised three battalions of eight companies each, on paper, only one of which, the First, had been organized and manned during the war, and it was serving at posts in Kansas at the time of which we are writing. I joined the regiment Feb. 28th, from Europe, whither I had accompanied General Schofield on his mission to secure the withdrawal of the French Army from Mexico, where it was supporting Maximilian's government, established there during our Civil War in opposition to the wishes of the patriotic Mexicans and a menace to republican institutions in America. I was assigned to command Company A Second Battalion, to which I belonged as first lieutenant, in the absence of its captain, and entered upon the usual duties at such a post.

It is hardly worth while here to describe Jefferson Barracks at that date; suffice it to say it had been constructed in the early fifties and its buildings of stone were substantial and commodious, but altogether lacking in so many of the conveniences now looked upon as necessities: Of plumbing and baths there were none, and most of the kitchens were in the basements. The location was on the bluffs of the Mississippi River, with fine forest trees and for that day an ample parade. The post was crowded to its limits, for there were assembled there the 3d, 10th, 13th and 18th Infantry regiments, two batteries Third Artillery and a battalion of engineers. Col. B. L. E. Bonneville, the explorer, made famous by Washington Irving, although a superannuated retired officer, was in command and expended his strength and energies in keeping the post and immediate surroundings policed. The officers were all veterans of the Civil War, except a few lieutenants of the class that graduated at West Point in 1865, and most of the enlisted men and recruits arriving were veterans from the disbanded Union and Confederate Armies.

Many of them "were on their uppers," as the phrase goes, having spent their substance in riotous living since discharge, and unused to the steady demands of earning a living in civil pursuits, they sought refuge in the military service. As may be readily conjectured the many were the froth and foam of both armies, and were undesirable anywhere. Some would cut a throat for a quarter of a dollar. The real "snow-birds" deserted as the spring opened, but many of the

most intractable held on to get transportation to the new country west and near the mining regions, when they too deserted in shoals.

Early in March one hundred newly arrived recruits were set aside to form Company G of the Third Battalion, and I was, in addition to the command of Company A, Second Battalion, given charge of these recruits, in the absence of Capt. Frank Muhlenberg who was carried on the returns as captain of Company G, Third Battalion. In a few weeks Muhlenberg arrived and announced his intention to resign from the army in about three months, when without my knowledge it was suggested to him to do so at once, so that I, who was the senior first lieutenant of the regiment, and would succeed him as captain, could, from the recruits I already was in charge of, organize my own company to my liking. This Captain Muhlenberg generously did, and my captaincy dated from April 6, 1866. He had already left the post before I knew of his action, and it was not till the fall of 1895 that I had an opportunity to thank him in person for his magnanimity.

By the middle of May the regiment was filled up and equipped and the headquarters and two battalions were embarked for the Upper Missouri, to be joined by the First Battalion assembling at Ft. Leavenworth, Kan. The Second Battalion preceded us and was destined for Forts Randall, Thompson and Sully. We of the Third Battalion sailed May 21st for Forts Rice, Berthold, and Buford. There was a good depth of water in that uncertain stream, the Missouri, and we got along fairly well to above Omaha. We touched at Fort Leavenworth and had a brief reunion with the First Battalion, and a short stop at Omaha failed to impress us with a full realization of the future of that promising place. The Union Pacific Ry. was building then and had about sixty miles of track laid in the direction of the Pacific Ocean, and Council Bluffs, just opposite in Iowa, was the goal which three now great railroad systems were striving to reach. We were offered town lots in Omaha, then a squalid, struggling, scattered town, little more than a hamlet, at prices that seemed high, but which would have made us rich in time if we had made judicious selections, but we had more caution than money and wended our way without investing.

As we approached Sioux City it was evident the fast flowing Missouri was rapidly lowering in volume of water, and its sinuous course and frequent sand-bars and shoal places were to give us untold labor and to delay our monotonous progress. The steamers we were embarked upon were taken from the lower river trade, and were too large in every way, besides drawing too much for navigation of the Upper Missouri after the first flood from the melting snows had passed along. And in addition to the men and their immediate belongings we were laden down with supplies that were to sustain us during the coming winter. From now on it was working our passage. Here

the boat would be walked over a bar by long spars lashed to her like the legs of a spider and she was raised up and on by the donkey engine, and again one moiety of the cargo was landed and the boat thus lightened was taken over the shoal to deeper water where the other half of the cargo was deposited on the bank and then the boat went below for the first deposit and took on the second upon its return up. The soldiers shared with the crews in this labor as well as in taking on the wood for steam at the infrequent wood landings, which gave rise to much discontent and no little grumbling. After a tedious voyage of forty-two days we landed at old Ft. Rice, D. T. about eight miles above the mouth of the Cannon Ball River and some forty below where the Northern Pacific railroad now crosses the Missouri at Bismarck.

It was in an absolute wilderness. No settlement worthy of the name on the river above Yankton, nothing at all north except the fur-trading post at Fort Benton, and hardly anything east till one reached St. Paul. Fort Berthold up river was about 185 miles away by land; Fort Sully about the same distance by land down stream and both from 450 to 500 miles by the sinuosities of the river, and Fort Abercrombie on the trail to St. Paul was 185 miles away to the eastward.

Fort Rice had been established in the Sully campaign of 1863, and was constructed by a volunteer regiment. It was on a high bank of the river and had no trees near it. The reservation embraced a woods and open grass-filled meadow in the bottom lands of the Missouri, near a mile above, and there was a wood reservation on the Cannon Ball, eight miles below, relied upon for our fuel.

The post was constructed in the form of a rectangle, the storehouses, barracks and officers' quarters forming the sides, but only those unoccupied being on the outside, and these were connected by a stout palisade which extended around to embrace the other buildings, and blockhouses surmounted by sentry boxes were at the diagonally opposite corners. A sally-port, with heavy and strong doors at the entrance, in the center of the east face, had the guard-house at one side of it.

About 150 yards below on the same bluff was the corral with granaries and stacks and stablings, all enclosed by palisading, and requiring a detached guard, as did also the saw mill, a little in rear and still farther down river.

The buildings were mostly composed of logs sawn in the mill to about six or eight inches in thickness and near twelve inches in width, put up in rectangular pens long enough to form four large rooms, a cross partition of logs in the center and the two other partitions of cottonwood boards sawn in the mill. Another partition ran lengthwise of the whole building, thus subdividing the rooms into two, which formed one officers' set of quarters. The building was only one story high, the roof made of slabs from the mill with a

slope from wall to wall sufficient to turn water, and covered by a sod of a foot or more in thickness, which served as a refuge and home for thousands of the myriads of rats that infested the place. One building alone was two stories high. It was built of logs, weather-boarded and shingle roofed, and contained three sets of quarters occupied by the colonel, who commanded the district, the major commanding the post, and his family, a wife and three children, and the one captain who had his wife, a bride, present. The floors of the other officers' quarters were of narrow cottonwood planks, cut like all the timber used from the river bottom, and sawed and used green, and it shrank and warped as it dried, as did the walls and partitions of the rooms, so that the floor was too uneven to carpet, the interstices were filled with earth and were dusty, and the walls warped and so twisted the door and windows as to let in the dust in summer and in winter the snow, which in that dry climate was an impalpable powder. In the mornings, after the fires had gone out in the stoves for hours, a bank of snow from two inches deep to a mere powder, would extend into the room from each window and door, for about three or four feet.

The men's barracks or quarters were of uncut logs one story high, built the same way, with the same sort of irregular floors and the roofs only differing in that instead of slabs they had brush, like hazel twigs, to support the sod, which was better for the rats and more inflammable and liable to fire.

The officers had only a meager furnishing for such quarters as they had, and very few superfluities. It may not be supposed they led a very luxurious life; but as for the men—they had bunks made of lumber, two deckers, each to contain two men, the bottoms of boards, no other springs, no mattresses, no sheets, no pillows, but instead a bedtick filled with loose straw, issued weekly, each tick to two men, and their allowance of blankets for covering, while they used great coats for pillows. Chairs were unknown, rude tables and rude benches the only furniture, and for tableware, mostly tin cups tin plates, iron three-pronged forks and bone-handled iron knives to match filled the bill. Here and there a company, with age and thrift to have a company fund, had block tinware, and once in a while one was rich enough to afford ironware china, with even a monogram on it. The government furnished nothing; there was no canteen, and a company fund was to be accumulated only in time, by management, economy and some self-denial, out of the daily issue of rations.

Life at that frontier post was not unlike life at many other such. It surely was not one round of pleasure, ease and gaiety. It was in a hostile Indian country, and although the tribes immediately about us were friendly, the malcontents under Sitting Bull were in the vicinity of the Bear Paw, and their little war parties were continually com-

ing about for plunder or bravado, and it was not safe to go any distance from the stockade alone or unarmed. Guard duty was very heavy, two nights in bed were a boon. During the summer and autumn there were daily drills, but very little target-practice, and much cutting of wood for the winter fuel and hay for the animals, which were increased greatly by the arrival of 350 head of cattle belonging to the Subsistence Department, and which was to furnish our fresh beef during the winter. Before the winter was over they became so poor in flesh, the soldiers spoke of them as "dried beef on the hoof." This herd added to the guard duty too, for it had to be driven daily to the prairie in the bottom-lands above to graze, and required a guard of at least twenty or thirty to conduct it back and forth and protect it while there, a specially burdensome duty during the bitter cold winter weather. And notwithstanding which a war party of Unca-papas swooped down on it one morning just as it reached the grazing ground and while the sergeant was posting his vedettes, attacked and dispersed the main guard, killing two men and wounding two, and was driving the whole herd to the hills. Fortunately the alarm reached the post in time for the garrison to turn out and overtake the savages, and all the cattle were recovered, except about five head, which the Indians segregated and got off with. After that a commissioned officer had to go on herd guard daily.

Among the daily fatigue duties was the hauling water in barrels from the river, for it is to be stated in contrast with prevailing conditions of the present time, where, at many posts in the United States, modern plumbing, porcelain bathtubs and stationary wash-basins, with running water, prevail, all the water used at Fort Rice was hauled in barrels, and dipped from the barrels that stood in every set of quarters. Bathtubs were unknown, and in winter, when the thermometer went below zero and stayed there, the water problem was serious. The ice in the Missouri was three feet thick, and in shallow water went to the sand at the bottom.

When we arrived at Fort Rice, July 2, 1866, the commissioned personnel consisted of Major J. N. G. Whistler, Commander of Bat. and Post; First Lieut. Wm. D. O'Toole, Adjutant; First Lieut. J. M. Marshall, Quartermaster; Capt. A. M. Powell, Capt. Chas. J. Dickey, Capt. Wm. M. Wherry, Capt. J. B. Irvine, commanding companies.

Lieutenant Marshall, in addition to his duties as quartermaster, commanded a company which was without officers, and also commanded a detachment of about forty men, taken from the five companies and mounted for escort and messenger service, which gave him a decided preponderance in the affairs of the post.

During the summer Lieuts. Phil. H. Ellis and Geo. M. Mitchell, and the Post-Surgeon, Dr. Bolliver Knickerbocker, joined. Later the roster was increased by the arrival of First Lieuts. Thos.

Little and — — Parsons and Second Lieut. James S. King. In the autumn Col. Isaac V. D. Reeve, accompanied by his staff, First Lieut. Thos. J. Lloyd, Adjutant, and First Lieut. R. A. Torrey, Quartermaster, came and established headquarters of the district he commanded at the post, being subsequently joined by First Lieut. H. C. Pratt, 13th Infantry, who was, I believe, regimental adjutant.

Captain Dickey went on recruiting duty early in the autumn, and late in the fall Captain ——— Duffy came for G. C. M. duty and was caught by the winter, having to wait over for spring.

The sutlers were E. H. Gregory and brother, and the American Fur Co. had a representative whose name has escaped me, while Chas. H. Galpin, a noted plainsman, was agent of the Northwestern Fur Co.; Louis Le Frombois, a half-breed, was the interpreter.

In the reorganization of the army, which took place that summer, the Third Battalion, Thirteenth Infantry became, by the addition of two companies, the Thirty-first Infantry and I found myself transferred from the regiment I entered, and which had had Sherman for colonel, Augur and Crawford for majors and P. H. Sheridan as a captain on its rolls, to a new organization, to date Sept. 21, 1866.

In that same month I had my first and only experience in independent command of a body of troops in the Indian country. "Two Bears," Chief of the Yanktonnais, a friendly tribe of Sioux, on the East of the Missouri, sent in a runner to say the half-breeds from the Red River of the North, a British tribe, had crossed the border with contraband goods, got his "young men" drunk, and had accumulated about all the Yanktonnais winter meat and furs, and his tribe was in such a demoralized condition he wanted help to extricate the tribe from the clutches of the Red River men. I was sent out with four companies of infantry and the mounted detachment to drive away the half-breeds and bring in our Indians. After a march of four days, in which I could get no nearer the half-breeds than a day's march until they crossed the border, where I was forbidden to follow, I gathered up our Sioux and conducted them back to the vicinity of Fort Rice. They were in a pitiable condition and were so nearly stripped of their possessions they had to be fed all winter and many died for want of food and shelter.

Not long after my return from this expedition General Alfred H. Terry visited the post on his annual inspection trip, from his Department Headquarters at St. Paul. I had served with General Terry during the closing operations of the Civil War, and had found a friend in him. When he was leaving Fort Rice he asked if I would like to come to St. Paul for service on his staff. Of course I said I should be delighted to do so, and he said he would send me an order when he returned to his headquarters.

The autumn passed away without interesting incident. Drills, herding cattle, stacking hay, gathering in wood, the customary fa-

tigues and police duties and the extraordinary guard duty filled the time. Twice I got away to hunt, for a week each time. The last steamer for this year came and went about the 20th of November, and on the 22d the snow began to fall and the winter set in in earnest and to stay.

If it was dreary and monotonous before, who could measure a winter in such surroundings? The few books were soon read and reread and exhausted. There was no club, no place for social intercourse, except a billiard table or two at the sutler's, and it was so cold and inclement, walking or riding were out of the question. Time wore heavily.

One other disadvantage must not be omitted, due to the isolation and want of means of communication. The Summary Court was not of that date, and the Field-Officers' Court could not apply. Yet for most offenses the Garrison Court sufficed, but was cumbersome, and for cases beyond its jurisdiction the conditions were deplorable. When all lines of communication were open, it took nearly or quite a month with bi-monthly mails only to get the charges to headquarters, a week to get action, then another month to assemble a court, if the officers were taken from other posts, two weeks to try the case, a month to get it to the department commander and fully another month to receive his action back at the post; and all this while the victim, it may be of folly, or carelessness, or neglect only, was languishing under guard in a crowded, squalid guard-house, compelled to labor and to consort with a lot of vile criminals and cutthroats.

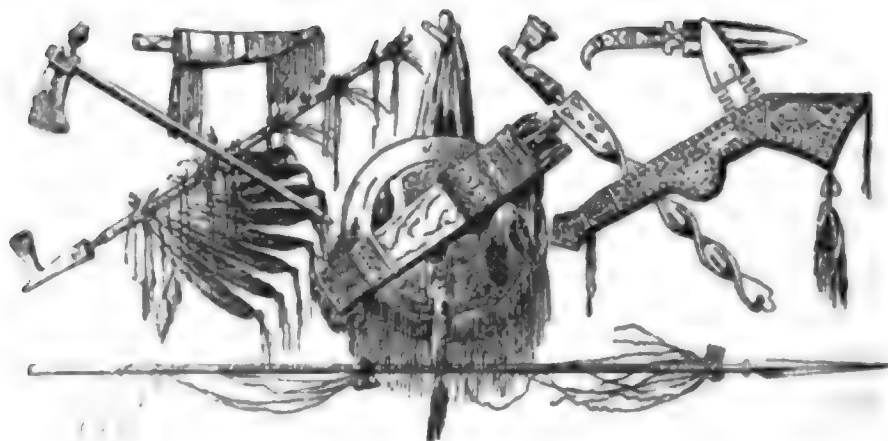
The winter like all other things came to an end, but it was not until the 11th of April. In March Lieutenant O'Toole received by the mail that came via the posts on the river an order placing him on duty at Department Headquarters, St. Paul. He left the post March 20th, with the mail party for Sully. Next day two Indians came in on snow-shoes from Fort Abercrombie with an order for me to report to General Terry, to be Inspector General, Department of Dakota. It bore date in November and had been held at Abercrombie all winter. I waited to see whether O'Toole got through, and in about a week he returned with a used up party, nearly all blinded by the glare from the snow, and disabled by the hardships of travel.

April 20, 1867, a flat boat arrived from Fort Buford, going down the river on the flood behind the out-going ice. It was owned by Farwell, trader at Buford, and Chas. Hoffman, sutler at that post, and both were on board with a crew of eleven men, discharged soldiers, quartermaster employees and miners. Two got off to stay at Rice, and O'Toole and I took their places for passage down the river. So I bade adieu to Dakota and the Sioux. We were fifteen days floating down to Sioux City, touched at Fort Sully where

Gen. D. S. Stanley, Colonel Twenth-second Infantry, was in command; at Fort Randall, where Gen. Elwell S. Otis, Lieutenant-Colonel Twenty-second Infantry commanded, and at Yankton. We spent thirty-six hours at Sioux City, took a steamer thence to Cincinnati Landing. A farm wagon from there to Missouri City, the present junction of the Sioux City branch of the Chicago and Northwestern Railroad with its Omaha branch, by rail to Clinton, Iowa, and steamer on the Mississippi from there to St. Paul.

When I reported to General Terry I found I had been under orders since some time in December of the previous year to report to General Schofield, at Richmond, Va., for duty on his staff. I got a copy of my orders and left next day for Richmond, via St. Louis, Mo., the home of my family.

March 9, 1905.





COMMUNICATION BETWEEN THE INFANTRY IN THE FIRING LINE AND THE ARTILLERY OF AN ATTACK- ING FORCE.

BY BREVET-COLONEL A. J. ABDY, R.F.A.

(*Proceedings Royal Artillery Institution.*)

THE consideration of this subject may at first sight seem to involve questions of signaling only; a short study of it, however, discloses how greatly the whole method of attack and chains of command in both infantry and artillery are mixed up with it.

In the first place it is necessary to fully understand what is the "firing line"; this is defined in the "Infantry Training" as part of the first body of infantry to develop the attack, this body being divided into *scouts* and *firing line*, portions of which may be kept back as supports until required; these formations are adopted immediately after a force leaves the position of assembly—generally a short distance beyond the limit of the enemy's effective rifle fire.

The duties of those employed as scouts or in the firing line are clearly defined in the training book, the only duty that should be noticed here is that scouts are "to report all obstacles to movement and all advantageous positions."

The process of attack is described in general terms up to a certain point; until, under the heading of the decisive attack, there are eight paragraphs of a more or less general character, but of which the third and eighth appear to bear closely on our subject in particular.

The third reads: "Thus in the first instance, a few scouts are sent forward, who are generally reinforced until at decisive range, the immediate objective is enveloped, or partially enveloped, by a strong firing line. When this objective has been gained and if necessary, placed in a state of defense, a further advance cannot be made, as a rule, by the whole firing line, but the process of attack should be repeated against the next objective."

The eighth states that success depends on the close and intelligent co-operation of all parts of the force engaged.

The words "at decisive range" in this third paragraph give rise to the question of how far artillery can accompany infantry and to what degree this may be desirable, but before considering this it would be well to notice the duties of officers connected with the firing line. The company commander must keep the battalion commander acquainted with any change in the dispositions of the enemy and pass on any useful information received from the scouts; further he must exercise general control over the fire of his company; when two or more officers are present with a company, one will always be with the firing line; among the duties of the latter is that of observing the enemy's movements, and reporting at once to the company commander.

To turn now to the chains of command beneath the Commander-in-Chief; there is in the field the corps commander as chief executive officer; he has with him the officer commanding the artillery of the army corps, whose duties are clearly defined in "Field-Artillery Training." The commands descend through divisional and brigadier generals to battalion commanders, and so to the company commanders already noticed. As regards the artillery, however, the chain of command is not quite parallel, for though the amended edition of "Field-Artillery Training" contains instructions for the duties of an officer commanding the corps artillery and an officer commanding the artillery of a division, it would seem as if, in future, the former of these officers would not exist, while the officer commanding divisional artillery would hold a very responsible post; and if this prove to be the case the command of the corps artillery would rest with the officer commanding the artillery of the army corps. Bearing these chains of command in mind it is now easy to see that any event which may call for the assistance of artillery during the operations of the firing line, previous to its arrival within decisive range of the enemy's rifle fire, can be dealt with by the commanding officer concerned. Thus a subaltern in the firing line observes some movement of the enemy that calls for artillery action; he reports to his company commander, and the demand for co-operation passes to the commander of the divisional artillery; should this officer be unable to supply the demand he in turn asks the officer commanding artillery of the army corps who would probably be able to send off one of his R. H. A. batteries to the spot indicated.

An infantry brigade-major, who was employed on the staff in South Africa, has kindly placed his most interesting notes at the disposal of the members of the R. A. I.; they show very clearly a system that might be developed without difficulty and are as follows:

"I am strongly of opinion that the responsibility for passing back information from the firing line to the artillery should rest with the infantry. In the first place it is so much to the interest of infantry that this should be done that infantry officers can be relied on to find some means of overcoming incidental difficulties when once the importance of this service is realized. In the second place I do not think that the required information can be conveyed to the artillery in sufficient time to make it of value unless it is sent direct from the battalions in the firing line. I had some experience in South Africa which led me to this conclusion. On the 18th of February, 1900, at Paardeberg, Major Tylden's Howitzer Battery and Captain Lennox's Field-Battery were at one time definitely charged with

assisting the attack of the Eighteenth Infantry Brigade. Neither battery could see either our own or the Boer firing line. I found that the battery commanders particularly wished to know the position of our own firing line and the approximate distance between it and that of the enemy, and as my duties took me constantly from a position near the batteries to the Eighteenth Brigade and back, I tried to keep them supplied with this information. I found, however, that it took so long in getting from the batteries to the Eighteenth Brigade and in finding out the situation and in returning to the batteries, that the situation had often completely changed by the time I reported it to the battery commanders. Later in the day I was able to arrange for signal communications between the Essex Regiment and Captain Lennox's Battery, and this worked satisfactorily. I may explain that the banks of the Modder, along which the Eighteenth Brigade were attacking are covered with thick mimosa jungle and that a mounted officer, who wished to get near the firing line of the brigade had to leave his horse about 1000 yards from the firing line and to crawl for a great part of that distance through the brush. This naturally took time. Under ordinary conditions it will, I am sure, always take a long time for a mounted man to get from a battery of artillery to a position from which he can correctly observe what is going on in the infantry firing line, and return to the battery with the result of his observation. For this reason, I do not think that any system of battery scouts will be able, alone, to keep up satisfactory communication. Occasions will, probably, very often arise in which they will be able to supplement the information sent back by the infantry, but I do not think that any thing should be allowed to absolve the latter from their responsibility in this matter.

"The commanding officer of an infantry battalion in the firing line naturally places himself in a position from which he can observe the progress of his firing line, or at least receive early information about it. He should be held responsible for passing this information back to the artillery, and for this purpose he should, I think, be given two or three selected orderlies from the artillery brigade which is to prepare his advance and support his attack. These orderlies should have a horse holder to bring their horses to the nearest covered position to themselves. Their presence will serve as a reminder to the infantry commanding officer of the necessity for keeping the artillery informed of his progress. My experience at Poplar Grove, Driefontein and on the Wittebergen confirmed the conclusion I had come to at Paardeberg that what battery commanding officers most want to know is the position of their own firing line and its distance from that of the enemy. I think a simple signaling code could be arranged, something on the lines of the present code in use in the artillery for reporting observation of firing; by this code the position of the firing lines could be reported in hundreds of yards relatively to the position of the sender. It will frequently be possible to find positions with a battalion in the firing line from which short messages could be sent to the artillery either by semaphore or small flag signal, and when this is possible will, I am sure, be the most effective method of transmitting information.

"I think the responsibility of the infantry should end when the required information has reached any battery of artillery. The battery commanders should then be responsible that information is passed to all brigade or battery commanders concerned. I think

that by attaching artillery orderlies to the commanding officer of a firing line battalion, and by arranging that the latter has within easy reach a small party of signalers, trained to signal to artillery by a special code, and finally by making commanding officers of a firing line battalion responsible that the required information reaches the artillery, satisfactory communication between the two arms will be established."

> Another staff officer of great and varied experience has also been kind enough to write as follows:—

"It is so important that during the attack the guns should not cease firing when the infantry approach the position, but continue with greater elevation, so as to inflict damage on the retreating enemy if they leave the position, or on their supports and reserves; but this can seldom be done with confidence and efficacy *unless there be a good system of communication** between the infantry and artillery of the attack."

Further he sends the following most interesting example which should go far to help in the evolution of such a system of communication as we seek:

"During the Jowaki campaign the Peshawur force were attacking the Sarghasha ridges which were held in strength by the enemy. The infantry advanced under cover of the 40-pr. Elephant Battery and 9-prs. R.H.A.

"— was conducting the signaling operations under General Ross's orders, and had a signal station with the heavy guns on the right and the 9-prs. on the left.

"It was very difficult to discriminate between our native troops and Afridis; our guns unfortunately did not observe the progress our men had made and burst a 40-pr. shell among them with disastrous results. The signaling officer, hearing of the accident, heliographed to the guns in time to stop any further casualties. Having gained the ridge the force bivouacked for the night and the guns were brought into position to support the further advance.

"Next morning the advance was continued across a wide open valley toward a high range of hills with prominent spurs, and important villages, with the usual fortified towers protecting them, at the foot of the hills.

"The signaling officer lettered the spurs from 'A' to 'E', and numbered the villages from '1' to '4,' commencing from the right flank, and explained to the signaling stations with the guns and officers commanding batteries that 'shell A' or 'shell 3' would be the abbreviated signal sent; he accompanied the general with a flag of which the signalers never lost sight, and consequently when our infantry were checked at any particular point he had merely to describe the spur or village whence the opposition was coming and in a very few minutes the spot was searched with shrapnel."

Here again we have another most valuable suggestion for embodiment in a system of communication.

Under existing conditions a field-telegraph line will nearly always be laid on a battle-field, advancing with the firing line as far as may be. The proper use of this system of communication between the firing line and the artillery will be only a question of provision of artillery orderlies at the telegraph receiving station.

*The italics are not his.—A. J. A.

In cases where a telegraph line is working, orderlies will always be provided by units, so no further action seems necessary.

How far such systems would be applicable when the infantry is engaged well within the zone of the enemy's decisive fire is doubtful; by that time a large portion of the artillery would have advanced to about 1200 yards from the enemy's position and the question would seem to become one of direct personal communication between the officers commanding battalions in the firing line and brigade or battery commanders nearest to them.

Frequently, too, batteries will have to advance again closer into the enemy's position than 1200 yards; it is easy to imagine questions of terrain or disposition of the forces of the defense which might necessitate such a move; in this case the commander of such a battery must place himself unreservedly in the hands of the infantry officer on the spot where his battery comes into action. This is most necessary for two reasons: the first, that as the battery has been sent for at the request of, or on the suggestion of this infantry officer, he alone can point out the object to be achieved and be responsible in all but pure gunnery details for its achievement; the second is one that reflects on the R.F.A. generally, viz., a prevailing want of knowledge of purely infantry tactics by officers of that branch.

In connection with this latter point, a battalion commander of great experience in many parts of the world, both regimental and on the staff, writes as follows:

"In our service the feeling of active and whole-hearted co-operation between infantry and artillery is but of comparatively recent growth, is not so strong as it ought to be, and is nothing like so strong as it is in some of the best foreign armies. * * * The infantry is after all the arm that in ninety-nine cases out of 100 decides the issue of the fight. * * * All artillery officers down to the youngest must at a glance be able to recognize infantry formations, discern at once what they are up to, and be able to follow intelligently and clearly, all infantry orders that may be passed to them for information." He goes on to advocate that every officer of the R.F.A. should, before promotion to the rank of captain, be attached for two months to an infantry battalion during the drill season.

Assuming artillery officers to have acquired this knowledge, he further advocates that in action every brigade, or single battery working alone, must have one officer specially told off for reconnaissance duties, to watch the fight, and report clearly what the infantry are doing.

His suggestion is excellent, and if only the knowledge were acquired, the officers would seem to be ready to hand in the persons of orderly officer to the officer commanding divisional artillery and adjutant to a brigade of field-artillery.

When once guns are in action and a brigade's tactical work temporarily at an end, a divisional colonel or brigade lieutenant-colonel would send his staff-officer on reconnaissance and observation duties of the exact kind indicated by our battalion commander.

The smaller the staff an artillery commanding officer has near him the better, and an adjutant who can read the varying moves of the infantry firing line aright, can recognize a useful artillery position in or near the firing line and can at once signal any news correctly to his colonel, will be far better employed than at the colonel's side,

and should prove a valuable means of help in the solution of the question under consideration.

To sum up: Within the zone of decisive rifle fire the question of communication between artillery and infantry seems to become one of mutual and personal co-operation between battery commanders and officers commanding sections in the firing line.

Previous to this stage the following points seem to be established:

(a) Officers commanding battalions in the firing line should be responsible for the transmission of messages from the firing line to the artillery, whether by telegraph or by signal.

(b) The artillery should provide orderlies for attachment to these officers commanding battalions.

(c) A code of signals as suggested should be drawn up and practiced; it should provide for the indication of different points on the battle-field, also for signals denoting the variations of artillery fire, and the localization of our own and the enemy's firing lines.

(d) There should never be any cause for doubt as to who may be the artillery commander with whom the firing line infantry signalers are to communicate.

It should not be difficult for two staff officers, say the brigade-major Royal Artillery, Aldershot, and the D.A.A.G. for signaling, Aldershot, to work out a scheme on these lines.

The only case not dealt with is one of pressing urgency where the officer commanding a battalion in the firing line finds that artillery must be sent forward at the earliest possible moment, there is no time to send farther than to the nearest brigade or battery commander; there is little doubt that each will rise equal to the occasions, and that the first intimation of the need for help that the divisional commander receives will be the sight of one of his batteries moving at its best pace to the assistance of its comrade infantry.

This article is written not as a solution of the question of communication, but as an indication of the direction from which a solution may most directly and most usefully be sought.

It would be presumption to think that more than the fringe of the subject has been touched, but it is hoped that enough has been written to lead to the production of further evidence and full discussion; and, when the time comes for action, that the whole matter may be placed in the hands of two really capable officers who may be given plenary powers to carry it through without the delaying intervention of a committee.

A COMPANY OF RUSSIAN MITRAILLEUSES AT THE BATTLE OF LIAO YANG.

Translated from "*Revue d'Artillerie*," January, 1905, for Proceedings R. A. Inst.

By COLONEL A. H. C. PHILLPOTTS, R.A.

THE employment of machine guns in modern warfare is a problem which has not been definitely settled, owing to not having so far received the sanction of experience. We could not as a matter of fact draw any definite conclusions from campaigns so different from those in Europe as that of Cuba and the Transvaal. The Russo-Japanese War on the other hand is of a sort that is bound

to supply us with valuable information on this as well as on other subjects at present shrouded in doubt. For this reason we think it may be of interest to give a description of the operations of a Russian company of machine guns.

The following appeared from the pen of an officer of this company, in the *Russki Invalid*, of October, 1904.

So far no account of mitrailleuses has been written during the present war.

Seizing the opportunity of a pause in the operations at the village of Fow-Lin, near the Tombs of the Emperors, I take up my pen and hasten to write down what I saw during a trek of 9000 verstes (6000 miles) and three engagements, one of which continued two days at Liao Yang.

We left the town of O. with only a small detachment of two officers, thirty-four men, the matériel and horses. At the time of departure there were the usual toasts, champagne and tears, the railway guards' whistle and we were off!

The first thought that enters one's head at the sound of the railway whistle and the roll of the railway wheels is this: Where shall we stop? I take up the itinerary and I find, Liao Yang.

In any case we are not in a fit state to go thus far where hard work is to be encountered and one ought to be completely organized and ready to take one's place in the front line. From the commencement of this long journey the first and greatest annoyance was the consciousness of great responsibility and not knowing how, where and when we were to stop and be provided with three officers, sixty-seven men and twenty horses.

We certainly did not know the special rôle that we were destined to play on the field of honor. I devoted three years to preparing myself and I have come to the conclusion that a good mitrailleuse gunner is not made in less time. We have our rules, our manuals and our instructions, of the existence of which very few have any knowledge. I have a proof of it now at this moment.

When in the month of August I put this question to one of the chiefs of a cavalry unit which had operated in the south of Manchuria: Would not my mitrailleuse be useful to the cavalry to combine the fire of infantry with its own rapidity of movement? This was his answer.

Mitrailleuses are only for use in the way that the Japanese employed them.

Were they not good judges?

We do not require layers. Our troopers know how to fire with rifles, we can equally well recruit our own mitrailleuse gunners.

A second commandant of a certain unit suggested to me the use of his matériel and of his men to dig trenches for mitrailleuses, ignorant of the fact that each company has in its second echelon eight shovels and that each gun captain has under his charge one mitrailleuse, one horse, one carriage and unfortunately also one rifle with its bayonet. The trenches for eight mitrailleuses require 120 men with sixty large shovels, working for from five to six hours according to the nature of the ground. It is obvious that our specialities are not universally known.

One of two things should be done. Either our arm should be specialized, or it should be put into the hands of the infantry, that is to say, hand over one or two mitrailleuses to each infantry regiment.

But we believe that the experiences of war will show the necessity for regarding mitrailleuse detachments as a new and distinct arm.

I hope at another time to discuss the future of mitrailleuses, just now I will describe the rôle of mitrailleuses at the action of Liao Yang, in August, 1904.

My mitrailleuses received their baptism of fire from the enemy's artillery at Da-tchi-chao on the 11th (24) July, when horses and men remained fifteen hours under a cross fire. To remain thus under the enemy's projectiles with folded arms, unable to work, was most disagreeable, although the losses were slight. Two men and one horse wounded.

On the 16th (29th) August, an order of the commandant of the division, of which my mitrailleuse company formed a part, detailed it for work on the right flank of the position, where it occupied the wood, south of the village of Goutsiaty, on the night of the 16th to 17th (29th to 30th) August.

My situation was as follows:

On the left, at 400 paces, the embankment of the railway, behind the heights of the Liao Yang position. In front of these heights was the village of Maïetoun, with two mamelons to the south of the village. The village of Maïetoun, as well as all the heights, were occupied by the N—— Regiment. In front to the south of the village of Goutsiaty the high millet had been cut down for a distance of 650 m., and beyond one could see at about 2 km. the village of Bésymiannoï and 3 km. off the village of Batchjaotsiatai. The mamelons on the east were about 2 km. from the borders of the village of Goutsiaty.

It was the 17th (30th) at 8 in the morning that contact was established with the advanced fractions of the enemy and the frontier guards assisted by two companies of the N—— Regiment near the embankment, close to the south redoubt. The mitrailleuse company could not owing to the distance, 2150 m., take part in this affair. Eventually toward 10 o'clock some mounted men showed themselves near the railway. Fire was opened on them from the summit of the conical hills these men threw themselves into the high millet crop, to the west of the railway embankment, but one could follow them through the waving of the crop and a little further, in a part where the millet was less thick, at a distance estimated approximately at between 1250 to 1300 paces (about 900 m.) from the mitrailleuses, one could perfectly distinguish the troopers and behind them the pack animals and their grooms. It was clear that a mountain battery was endeavoring to advance without being seen in order to take in reverse by its fire the two conical hills occupied by two battalions of the N—— Regiment.

The target was an excellent one for the mitrailleuses, it was bound to take instant advantage of the favorable moment to annihilate the battery. There was no time for getting a bracket. Fire was opened at once at twenty-five paces echelon, the first gun at 1200.

As soon as the fire was opened, the battery inclined to the right toward a thicker part of the millet, but it was too late. Every living and moving object fell under the hail of bullets.

The mitrailleuses had fired 6000 rounds, but the importance of the objective justified the expenditure. I ordered cease fire one minute and a half after it commenced, because there was no further objective for our fire.

Two hours passed in complete peace; there were not even single shots fired against us. Toward midday a slight movement was no-

ticed across the railway on the western side of some single men who were trying, after having occupied the railway embankment, to take us in reverse. This could not be allowed. On six different occasions fire was opened at different elevations with rapid continuous fire. As the Japanese passed one by one at different distances one had to use echeloned sights. As they found that this movement was not successful, the Japanese ordered a steady, regular attack against the village of Goutsiaty by means of successive swarms of skirmishers, but their repeated attacks only allowed them to advance as far as the spot where the millet was mown. Up to nightfall it was impossible for them to move a yard forward.

Nightfall rendering the mitrailleuses impotent permitted the Japanese sharpshooters to approach within easy firing distance and until morning, almost without interruption, they kept us awake by a fusillade which in truth caused us very little loss. At daybreak we fired a "tape full" of bullets to clear the isolated riflemen out of the whole extent of the millet.

Complete peace then reigned for half an hour, then some shots at intervals gave us to understand that there were a small number of riflemen near the spot where the millet was cut. One only had to lift the hand, the head, a cooking-pot, or some other object above the embankment when immediately one heard the crack of shots and the hissing of bullets.

These riflemen became so annoying that certain men asked permission to go and drive them out with the bayonet. I gave them permission and fifteen men taken from among the horse holders and the gunners and led by a non-commissioned officer jumped from the enclosure.

The Japanese to the number of twenty-five rushed to meet them. An officer who was with them, threatened by the bayonet of the soldier Ch—— threw down his sword and wounded the latter in the foot with his revolver. The officer was at once impaled by the bayonet of the soldier G——. Two men carried Ch—— behind cover to have him attended to. The non-commissioned officer S—— killed three Japanese with his bayonet which, however, unfortunately stuck in the body of the third man so that he could not withdraw it and a fourth man shot him at point blank. This Japanese soldier was at once killed by soldier A—— and the five dead men lay in a heap. This hand to hand struggle only lasted a few moments; there remained no living Japanese in front of us and until 2 in the afternoon no other shot was fired at us. We were thus able to rest a little and make a repast of biscuits and water and contemplate our trophies; some rifles, an officer's sword, etc.

At 3 in the afternoon, some Japanese collected near a small bridge over the railway, one of them signalling to his people with a small yellow flag. This went on for about an hour before the isolated riflemen could reach him owing to the distance 1050m. I then ordered the fourth section to move him from the bridge in order to cause the signals to cease. The section commander happily chose the moment when two Japanese came from under the bridge with the flags, fired his first gun at 1025m., the second at 50m. further, and the signalling stopped.

At about 5 o'clock a movement of a chain of signallers commenced in the millet, with a view to turning our flank right near the village of Baitsiahagouavo, where the millet had not been cut and where we

constantly had to fire into a hidden road in the millet, leading to the village of Datchjaotsiatai.

It was not until 7 in the evening of the 18th (31) August that the Japanese decided to drive the mitrailleuses from the village of Goutsiaty by artillery fire. Having learned that their infantry had undergone a check, they had established in the village of Datchjaotsiatai a battery which overwhelmed us as well as the village with shrapnel, bursting shell and case.

Although the men were sheltered by the mud wall, we had many wounded and were not able to breathe freely till nightfall, when the fire, to which we were absolutely unable to reply, ceased.

At 9 in the evening, I received orders to leave the position. In two days' fighting we had had 30 per cent. losses in the personnel serving the mitrailleuses and we had fired 26,000 rounds.

At 2 in the morning of the 19th (1st) August, furious shouts of "banzai," "banzai," uttered by the Japanese were heard, these latter threw themselves against our compatriots, but on arriving at the village of Goutsiaty they found the mitrailleuses no longer there, being as a matter of fact safely ensconced behind Liao Yang.

The task which the company had been set, namely to prevent the Japanese from taking in reverse the conical hills and the village of Maïetoun, had been fully carried out by the mitrailleuses.

The company commander, Captain Sournie, received for this duty the Order of the Fourth Class of Saint George, all the officers received decorations and the men ten crosses of Saint George.

The first conclusion we come to from this account by the Russian officer is the well-established fact of the impossibility here shown for mitrailleuses being able to fight artillery.

This conclusion agrees with the teachings of the War of 1870; it can never be disputed by anyone. Under a well-directed artillery fire, mitrailleuse companies can only cease fire, take cover and await a favorable opportunity to reappear. The rest of their rôle is comparatively easy, owing to the small visibility of their weapons.

At short distances, such as 1000 meters, destructive effect can be obtained on personnel, even when moving, without ranging, merely by employing rapid, continuous and progressive fire. This is the way the Japanese mountain battery described in the foregoing was attacked. In the same way at these short distances individuals may be fired on.

At distances beyond 700 meters, the Russian mitrailleuses showed themselves invariably superior to lines of riflemen, whom they always succeeded in stopping in open country.

The Russian seems to conclude that it is useless to make use of mitrailleuses at ranges over 2000 meters.

The expenditure of ammunition was by no means excessive. Six thousand cartridges representing as a fact the same number of projectiles as twenty shrapnel, and they take approximately the same time to be fired. To obtain the same number of shots in the same time from infantry the employment of at least 400 men would have been necessary, and even then, the result would have been probably inferior.

On the other hand, the expenditure of 26,000 rounds in two days' fighting, being 1660 per mitrailleuse per day, does not demand any exaggerated supply.

The Russian mitrailleuse companies carry with them into action 5850 rounds per gun.

Mitrailleuses should always use rapid progressive fire, but as with this weapon ranging is often very difficult or even impossible, it is indispensable to have recourse to the employment of instantaneous telemeters, and above all to reconnoiter as minutely as possible the entire zone of action of the guns. Otherwise stated, mitrailleuse companies should always behave like batteries in a position of readiness and always be prepared to open a well-directed aimed fire on any point.

LONGEING AND TRAINING AT OBSTACLES.*

BY COUNT RAOUL DE GONTAUT-BIRON, FORMER RIDING MASTER AT SAUMUR.

*Translated for the Second Division, General Staff, United States Army,
By Captain CECIL STEWART, Fourth U. S. Cavalry*

TRAINING THE HIGH JUMPER.

If it is desired to develop a horse into a high jumper, his training must be pushed further, for hitherto he has acquired only sufficient knowledge to profit by lessons of more and more nicety which should perfect his education over obstacles.

It is with an eye to this improvement that we have dwelt quite particularly upon *docility on the longe, absence of pause before jumping and the latter being done squarely by the horse*. We should scarcely have had to speak of these conditions if our sole aim had been to turn out a hunter, suitable for riding over, at relatively diminished gaits, regions of sufficiently infrequent and not serious obstacles; neither should we have said that longeing over obstacles ought to be considered as quite difficult of execution.

But our aim being to make a hunter capable of going over difficult regions at rapid gaits, and even at need to take part in races set apart for hunters, we have determined to combat defects that are not of much consequence in easy country and at relatively moderate gaits, but that are fatal when it is desired that training be pushed further and a high jumper produced. If, for example, the horse has been put to obstacles before being perfectly tractable on the longe, and if, having reached this point in his training, he has got the habit of jumping askew and showing a pause, it will be a long and hard task to rid him of these faults; the instructor, who in spite of that would further push training his horse, will see its progress arrested at every instant.†

It is here then that the work is especially directed with a view to obstacles of width, if you would make a horse that is a perfect jumper. Three water jumps must be to hand: one of two meters, which should often be reverted to, to give the horse confidence, as we do with the bar on the ground, at the end of each session; one of three meters; one of four meters.

*Concluded from September JOURNAL.

†We have seen many riders wishing to use our method without being thoroughly acquainted with it; the horses that they were training also appeared to take the high jump quite well, but were incapable of making a water jump of slight width.

These wet jumps or ditches will be dug in the center of a bit of ground so that they may be jumped on the longe to both hands. They will be about 0 m, 50 deep and filled with water if possible. Each will be furnished with a movable brush screen, a sort of small hedge, which, withdrawn or advanced, increases or diminishes the width of the obstacle.

We insist upon jumping to both hands, in order to combat in the horse the disposition to jump askew, a tendency to which he would all the more readily yield as, for a width of moment, the instructor is often compelled to use the long whip.

We shall add that as training advances, tractability on the longe is more indispensable, and the task of instructor and sub-instructor more delicate.

One should be very exacting in the results obtained at the gallop before using the trot, admitting that the animal's strength will stand the work at this pace (which moreover would considerably develop his powers).

HOW TO GIVE THE LESSON.

The horse on the longe will be put over the two meter ditch after the same principles as for that of 1 m, 20.

The instructor will be careful to stand so as to allow the animal to go straight for several strides before the obstacle and also so as to be able to follow him up with the whip if necessary; these explanations have already been given, with plane diagrams to help. If the horse is tractable on the longe and the instructor knows how to take his stand, the animal should be able, if need be, to run about twenty meters at the gallop, straight for the obstacle. It is then understood how ordinary horses, finding themselves thus almost under the same conditions as when at large in the chute, succeed in jumping a wet ditch of at least five meters.

If the instructor is satisfied with the way the horse jumps the two-meter ditch, he puts him over a bar higher than those he has already jumped; then over a hurdle rather low at first, a new artificial obstacle always giving rise to fear.

Next he progressively draws back the movable screen from the ditch, widening it to about three meters.

Once put over these obstacles on the longe, the horse is mounted, and the lesson repeated, following the known principles, making the animal jump the same obstacle several times at gallop and trot, and in both directions if it be a ditch. He will even be made to jump sometimes at the walk, if he is powerful, being careful to let him hurry the last strides.

However, let us remind the instructor that the more the height is increased the more must the slow gaits be used; for the horse would contract the habit of taking off near the obstacle and would act likewise at the gallop. Now this defect is all the more serious the higher the obstacle and the faster the gait.

Next go out in the open, where the horse will be made to jump, first on the longe, then with a rider, obstacles proportioned to his progress in training.

After a number of sessions likewise indicated by the animal's progress, the preceding lesson will be repeated over the three-meter ditch, increased to about four meters, and over an increasing height, always having a care that the height does not prejudice the wide jump. Also go into the open.

During the course of these lessons, each session will be ended by again longeing the horse over the two-meter ditch.

It will be noticed that the three-meter water jump beginning to be a serious obstacle, the animal when ridden should leap it but a few times, under penalty of misusing his strength. It is then advantageous to dwell upon that of two meters.

Then, following the same procedure, the four and five-meter jumps will be negotiated.

If the horse manifests fear either by a pause, or by rushing, serious obstacles must be abandoned and return made to the two-meter ditch, which will not be left until the horse is perfectly quiet, and while following the progression, step by step, which should lead back to big obstacles.

If the horse stops and refuses at the high jump, or if he hurts himself in jumping, there must be no hesitation, in order for him to regain lost confidence, *to lower the obstacle and often even to lower it a great deal*. For there is great risk of disgusting him by bringing him back several times to the same obstacle, without being able to make him jump it. And on this subject the cavalry drill regulations very wisely say: "The trooper's ability consists much more in the art of anticipating resistance on the part of the horse than in power capable of mastering it, and the distinguishing mark of sound experience consists especially in aptitude for avoiding all occasions capable of provoking a struggle between the trooper and his mount."

CHAPTER VIII.

INSTRUCTION OF RIDER AND MANNER OF TAKING OBSTACLES.

It would be a serious mistake to believe that by clearing an obstacle from time to time the trooper can learn to jump properly. On the contrary, we think that, if in order to acquire this ability, it is not beneficial to jump great obstacles, it is at least necessary to jump many of small consequences.

Let us make a distinction between two kinds of obstacles; those that should be passed without jumping them and those that must be jumped.

We will begin by studying the first, that is those that should be passed over.

First of all, it is necessary to be imbued with this truth, that the horse constantly has need of free use of his head and neck, to avoid needless fatigue as well as falls. Thus, when at the walk the trooper supports his horse too much and prevents thereby the nodding movement of head and neck that helps the animal so much and is so natural for him when free, he handicaps his mount in the same way a pedestrian would be, if when taking a tramp his arms were so fastened that he could not move them. To climb a steep hill do we not incline the head and upper part of the body forward. Would the horse draw a heavy load going up if he were reined in and thus deprived of free use of his head and neck? Would not man often be subject to a fall, if, crossing rough ground, he had not the use of his arms? In varied and difficult ground, how would the horse pick places to cross and avoid falls, if he had not fully at his disposal the helm and balancing pole formed by his head and neck? *To support one's horse then, is without in any way hindering him, to keep only a light feel of his mouth, so as to be ready, through this kind of in-*

cessant supervision, to help him in case of error and not to deprive him by too violent a pull, given by too heavy a hand, of free use of his head and neck. To climb a steep slope it is again and always freedom of head and neck that is necessary: the trooper has nothing further to do than to carry forward the upper part of his body seizing with one hand the mane near the withers, while the other hand, if need be, guides by the reins; the horse then ascends with ease and without undue haste, if, however, the slope is not too stiff. On the other hand let the trooper pull on the reins and thus prevent his mount using his head and neck, and then the horse, when willingness overcomes instinct of self-preservation, rushes to climb the slope, without noticing the ground over which he goes, which occasions numerous falls.

To descend a stiff slope, it is equally indispensable to let the horse have free use of his head and neck. Furthermore, the trooper leans back seizing the cantle of the saddle with one hand so as not to slip and holding the reins in the other to guide if need be, but without pulling in order not to bring the horse on his haunches. Care must be taken in ascending or descending not to follow slopes obliquely, which might lead to accidents in case of a slip on the hillside.

In varied country, if he meet with quite a small obstacle, the horse steps over it when he has a free use of his head and neck; otherwise most often he leaps it through caution; for he well sees the obstacle, but is not able to value its importance nor to judge the exact spot where he should spring in order not to fall, while still keeping up the gait.

This information helps the trooper in going over varied ground, aids him in better passing over obstacles that it is unnecessary to clear and to better jump those that cannot be passed over.

Let us recall that jumping is performed by the horse by a true see-saw action, done with more or less ease according as head and neck are themselves more or less free in their play. If the rider prevent the horse using at will his head and neck, he would commit a more serious mistake perhaps than if he tied behind the back of a man about to jump or pulled from behind his arms that require to be thrown forward to help him raise his body. Before jumping, the horse draws back head and neck upon the trunk to help the rise of the forehead, but this withdrawal is preceded by a movement in extension of these same two members. A man who clears an obstacle, especially with heels together, does with his arms what the jumping horse does with his head and neck.

There is nothing simpler than these explanations: if the trooper grasp them not immediately, he has but to jump a good deal and he will quickly perceive their accuracy.

For jumping, the following precepts must be conformed to: before jumping, put the feet home in the stirrups, sit so as to give perfect freedom for the legs to urge the horse, if needed, and to steady him in moving forward; adjust the reins* so that the tension on all is equal, so that the bearing is not divided and consequently the mouth without mobility which would prevent it from gaining feel of the trooper's hand for ready execution of movements of head and neck. At the moment the horse springs, the trooper should be united with his motions by gripping with the legs without too much constraint and yielding the back, should keep his body constantly in a vertical direction (in other words perpendicular to the general surface of the

*See hold of reins.

ground) and let the right hand fall by the side* while allowing the left to obediently follow the different movements of head and neck. Once the jump made, the trooper retakes the hold of the reins he had beforehand.

If the trooper is riding with snaffle only, he crosses the reins in his left hand, which does not prevent his guiding with both hands up to the obstacle and then letting fall his hand by his side at the moment the horse springs.

The trooper, who through frequent drill has acquired sufficient tact act according to the rules expounded, is alone able to hold the reins in both hands during the whole performance of the jump. This hold of the reins, assuredly more correct, requires too much nicety for us to advise it in a general way.

We do not like the method consisting in gripping the horse forcibly and giving him both spurs at the moment he leaps, because by acting thus the animal is thwarted in his initiative, which is however in such a case a guide infinitely safer than the trooper's aids; because the spur is seldom applied exactly at the moment it would be of use; because the horse, accustomed to be ridden thus, is out of his reckoning if a rider acts otherwise; because spurring may make the horse too eager and hurl him into the obstacle. It is therefore seen that it is only at rare occasions and exceptionally that the spur may be used at the very moment the horse springs.

The trooper being thoroughly imbued with the general rules that govern the way to negotiate obstacles, a bar is put on the ground on one of the long sides of the riding-school and perpendicular to this long side. If a squad is being instructed, it forms in circle over already trained, pass over the bar quietly, the instructor takes them off the track and goes on with instruction of the troopers just as if the bar was not in the school. In training the trooper at obstacles the same steps must be followed as in training the horse, and as with the latter the highest importance attached to passing over the bar on the ground; it is left thus without being raised, as many days as necessary for the horses, without showing any pause, to step over it without jumping, proof that the troopers are able to pass over a small obstacle, without the hands interfering with the horse's mouth. Then, for a longer or shorter time, and while continuing instruction as though there were no obstacle in the school, the bar may be raised a little each day, until an average height is reached (ninety centimeters, for example, as laid down in the cavalry-drill regulations), having less jumping as the bar is raised, and being careful for some time to end the session by returning gradually to the bar on the ground. In general the reins will be held in the left hand, but it is a good thing for practice, sometimes to take them in the right hand and then let the left fall by the side; invariably the trooper should guide his horse up to the obstacle with both hands until the moment of lapping.

As complementary to this work the bar, or, better, a second bar is placed in the central part of the school, perpendicular or parallel to the long sides, for the troopers to jump when they meet it and thus accustom themselves to guide their horses well over an isolated obstacle; begin, in the usual way, by placing this second bar on the ground.

The means employed to learn the wide jump are the same as pre-

*At the beginning, it is well, as we have said, for the trooper to throw his hands backward in the air, as if he wished to give a backhanded thrust at someone behind him.

scribed for the high. The trooper's general instruction is continued without there being need of especial lessons. Later on, at the end of the exercise, the obstacles arranged on the drill-ground are jumped, at first by trooper, then by twos and by fours.

At last the troopers' instruction is ended by taking them on a cross-country ride to have them jump different obstacles taken note of previously.

Good results will be quicker arrived at, if daily during the vaulting exercises the troopers are made to jump riding a horse held on the longe.* Their arms will be allowed to swing; confidence will quickly come with the habit of letting ones self go with the horse's movements.

Moreover, in our opinion, this is the only case where a man should jump without the reins. By dropping them the trooper's apprehension is increased instead of giving him confidence, and the freedom the horse has while jumping is largely set off by the sudden jerk he gets from an inexperienced man when the latter retakes the reins once the obstacle is passed. Further, when a man after long drilling succeeds in keeping his seat while dropping the reins during the jump, he loses this seat when retaking the reins especially to jump using both hands. For the horse that, not being held, has gotten the good habit of thrusting out his head and neck, still instinctively seeks to do so when held; the trooper, not having received especial instruction intended to give him flexibility in his arms and sense of touch in his fingers, will often be torn from his saddle and will lose the benefit of long lessons passed in acquiring a good seat. On the contrary, the method we use for training horse as well as man, allows of reaching, *in shorter time, a better final result*, gives to the trooper very quickly and almost in spite of himself confidence, a seat and good hands, and has the advantage of leaving the horse free to such an extent that he is hardly more interfered with than if he was not held.

If the horse's taining has been well done, the trooper has no difficulty in guiding his horse up to the obstacle. But he may have to ride some imperfectly trained or obstinate horses. What is he then to do?

If the horse hesitates when he is being directed toward an obstacle his opposition must be forestalled by stimulating him with blows with the calf of the leg and even by strokes of the spur more or less frequent and more or less vigorous, according to the case. It is then that the advantages of a good seat will be felt, the indispensable requisite that the legs may act freely.

Too often the trooper's legs remain almost inert and then the horse stops before the obstacle; the reason is that the man has not a sufficiently good seat to properly make use of his legs. Let them supplying be further dwelt upon, what the cavalry drill regulations call "Leg exercise" and that remedies these defects.

If the horse avoids in an oblique direction while trying to get the bit in his teeth the trooper makes him resume the gait at which he is sure he can hold him, separates the reins, brings him back at this gait as near as possible to the obstacle and lets him jump or urges him, if it be necessary, so as to force him to leap. It is there that the effect of opening the reins must be used, again called direct effect, which too often is forgotten: whenever a trooper finds himself at variance with his mount he masters him without difficulty

*A horse well trained on the longe is chosen and only small obstacles are jumped.

and starts him again in the direction he wishes to go. if he uses this means and if he knows how to assist by the action of the leg on the same side. If the horse wishes to avoid to the left while moving, or if standing obstinately, refuses to turn to the right, the trooper has but to freely open the right rein and carry the haunches to the left with the right leg; the horse is then compelled to face to the right; then his head is straightened out so as to let him jump and he is urged with the legs. If, after having brought head and neck around to the right and before the desired direction has been completely taken, the trooper feels his horse renew his efforts to avoid he may, in order to compel him to keep his head and neck bent to the right, place the hand behind his right thigh; it is then impossible for the horse to displace his head by putting it again in the same direction as his body and he is not slow to yield.

When the horse seeks to avoid from as far off as he perceives the obstacle, it is easy to straighten him out if care is had to take the gait at which one is master. In such a case, it is necessary absolutely to master head and neck and on the other hand to avoid head and neck violently mastering the trooper's hands*, which enables the horse to go where he wills. If the trooper, from the time he feels the horse tends to avoid, makes it felt by a light action of the hands that he is determined to be the master, the direction of the obstacle is most often retaken; but the horse that has not been mastered at the proper time, becoming all the stronger as his gait is increased, cannot always be straightened out, in spite of all efforts made to get a hold on his mouth. Moreover, the trooper, by vigorous pulling, will have more or less hurt the mouth, and we know that this part should not be injured if the jump is to be made under proper conditions.

Some horses avoid with such dexterity at the very instant they come up to the obstacle, that it is very hard to prevent them. In this case we advise holding the reins in both hands as much as possible and until the horse is felt to spring. But a trooper quite used to obstacles does not always succeed by himself in mastering these horses, that it is more discreet to again put to training.

If the horse swerves by a whirl about to the right, he is brought back to his original direction by a left about and he is brought back to the obstacle at the gait to which he may be surely held. If he resists at the about, he is held to it by opening the left rein and by closing the leg on the same side. Inverse means are used if the horse swerves by a whirl about to the left.

If the horse bolts and bores on the hand he must be brought to a gait at which he can be mastered and thus brought up to the obstacle, but not too close, so that he may not be hindered at the very moment of jumping.

If the horse stops short, a new start must be taken; try again to make him jump by vigorous urging at the moment the obstacle is to be negotiated. We prefer this method, formerly used, to that consisting at present in reining back the horse to obtain the start. For the horse generally stops short before the obstacle because he fears the hands, and he will fear them all the more when they have been used to rein him back. In all cases, when it comes to horses

*The horse that violently takes possession of the rider's hand must not be confounded with the one that gently feels it and with the object of executing his jump following nature's own rules.

that want to stop in front of the obstacles, the legs must be used vigorously and, if necessary, the riding whip.

If the horse stops as far off as he perceives the obstacle and refuses to go on, or even wheels about, he is straightened out and effort is made to make him jump by using the recognized means. If he becomes confirmed in such a bad habit, it will be better to dismiss him and turn him over to a gentle and energetic trooper, who will be careful to again and very gradually put him through the series of exercises described in training the horse. This kind of balkiness is very hard to do away with, as it is the consequence of pain occasioned, either by the trooper's bad hands, or by too tender a mouth, by abuse of jumping, by defective conformation, or finally by blemishes. Indeed in the last case, if persistent attempt be made to make the horse jump, risk would be run of rendering him unfit for any service by developing the blemishes that interfere with his action.

Our last advice is: that, if the trooper has bad hands and the horse a tender mouth, the obstacle must be gone at with speed. In fact, what must be avoided in jumping is hindering the horse. Now the trooper with bad hands checks the different movements of head and neck; the horse with a bad mouth is impeded in these same movements, since he may not gain feel with it of the man's hands in order to perform his jump. The necessity is, therefore, seen of putting the horse at the gait at which movements of head and neck are but little marked.

CHAPTER IX.

SOME CAUSES THAT PREVENT THE HORSE FROM JUMPING.

The causes that prevent jumping come from horse or rider.

The causes coming from the horse are: bad sight, defective or injured hocks and tender feet. When these defects are very pronounced, even the experienced horseman cannot give his horse all that is necessary to make a good jumper out of him. Let him then avoid jumping often and especially upon hard ground, so as not to cause pain consequent upon concussion of the joints and shocks harmful to the feet.

Again one of the reasons most often preventing a horse from jumping is an excessively sensitive mouth. This is more frequent than formerly, since for some years our stock, by crosses at times more or less happy with the blooded horse, has been transformed; consequently the mucous membranes on which bear the different instruments which serve to guide the horse are more sensitive and more easily irritated. Now a too sensitive mouth gets feel of the rider's hand with difficulty and prevents regular jumping. Therefore, the first requisite for a horse to become a good jumper is to have a good mouth, that is a mouth not only not avoiding contact with the bit, but further that should be capable of getting feel of the rider's hand in such way that head and neck have all the necessary freedom. So the hack whose mouth has been rendered too fine makes a good jumper with difficulty.

The principal reasons that prevent the horse jumping and that come from the man are: bad hands and timidity.

We have said enough about the handicap of bad hands in executing the jump to make it useless still to dwell thereon.

By timidity we mean fear, lack of confidence. When the rider is afraid, has not even decided to jump, is not sure of himself, is per-

suaded in advance that his horse will not jump, otherwise stated has no desire to jump, his horse is immediately warned of it by a sort of nervous action arising probably in the hands and transmitted by the reins to the mouth. This fact we have many a time noted without being able to explain it otherwise. The horse understanding well then with whom he has to deal turns back or stops before the obstacle. On the other hand, when the rider is courageous, determined to jump, has no feeling of danger, is sure the horse will not be able to resist him, he will safely clear the obstacle, even though he ride a horse little disposed to jump. Who has not seen drunken men make their horses perform, through bluster or otherwise, improbable jumps that they would never have dared demand if they had been in their sober senses? A shortsighted person sometimes gets over incredible obstacles that he has not been able to see.

Some timid riders, feeling their insufficiency, seek to divert their minds by actions in part feverish, wriggling about in the saddle, belaboring the horse at random, hanging fast to his mouth. At to the latter, Baron d'Etreillis said to us quite correctly: "When you see a man come up to an obstacle like a madman, be sure he is dying of fright. Like Gribouille he jumps in the water for fear he drown. They are a class of poltroons quite worthy of respect, as they take it upon themselves to face a danger that vividly impresses them; but, from the horse's point of view, true cowards, those who flee danger, are perhaps to be preferred; at least they could not spoil the horse."

CHAPTER X.

HORSE TOO EAGER AT THE OBSTACLE: CAUSES AND REMEDIES.

A horse rushes upon an obstacle, when suffering, of no matter what kind, prevents his jumping quietly. If he has weak loins or hocks, for example, he feels that the more dash he puts in it the muscular effort he will have to make and consequently will have less fatigue to support. But, let us have to say, suffering that is always attributed to loins or hock has often its seat in the mouth.

Many a time we have seen horses jump at slackened gaits (walk or trot) who had bad loins or defective hocks; rarely have we been able to hold down to this, those with too tender a mouth. In general the horse is too eager at obstacles, when he is deprived of free play of head and neck, either because the mouth is at fault through excessive tenderness, or the hands are not light enough. It is not then through love of jumping, as is often thought, that the horse rushes at obstacles.

Moreover, about the same may be said of every horse termed too eager. Let a horse ridden or harnessed mince his trot instead of going at a free gait, gallop instead of trot, I have reason to think that this animal is eager, not because his hocks or loins hurt him as is the fashion to say, but because his mouth hurts. It in fact is restless, now shaken and ceaselessly in movement as if it refused to take hold of the bit, now drawn up so as to escape all action of the hands. Let a horse bore; he is said to be hard-mouthed, when most often his mouth is too tender. He contracts it so as to feel a heavy hand as little as possible and it is only when tired out by this contraction that suddenly he opens his mouth as though to avoid the bit's action. Such a horse is perforce all the harder to manage, and trots the more irregularly as he is more severely bitten; the very thing, however, most often done without fail.

We must not, however, confound the horse that bores because his mouth is too tender with the one that bores because his is not sensitive enough, or rather because the parts on which the bit rests are thick and the neck heavy. The first pulls in order to shield himself, the second because he does not feel the action of the bit; this last defect is easier to correct than the other.

Heaviness of hand is often in itself alone the cause that makes a horse with good loins and hocks suffer; the weight of head and neck thrown backward overwhelms the hindquarters, that can no longer freely give impulsion.

In order to know whether the defects I have just spoken of came in fact from excessive tenderness of mouth, I put a cavesson on some horses having these troubles, to each side of which I had attached a rein. After practice I guided them with these reins, without using snaffle or curb, and almost always proved that soon necks were stretched out, jaws no longer moved convulsively and naturally gaits become regularly and free. The horses no longer sought to get out of hand in a word they had regained freedom of their head and neck they no longer contended, they were no longer too eager.

Many a time I have seen teams refuse to start, stamp, then dash ahead with violent bounds. They never failed to say that the horse was lame in the shoulder. I replaced the bit in use by a plain snaffle with large mouthpiece and generally I at once obtained willingness to move forward.

My object is not, of course, to announce as a principle that a tender mouth is the sole cause of the faults I have just mentioned. But I do think that excessive tenderness is a defect more common to-day than formerly; riders' hands have not become better, while horses' mouths have become more delicate following blood introduced in very great quantities in all our breeds.

This too long digression was not without use in making the rider understand that if he has bad hands, it is he himself that is the cause of his horse's fault of being too eager. But if the rider has good hands while the horse's mouth is exceedingly tender, this last trouble does not always disappear and may only be palliated.

As to the course to be pursued to quiet the horse that has gained the bad habit of bolting over obstacles, we will point it out in relating what method was employed in 1887 with *Padley*, the well-known hunter. This animal, that formerly I had had in my hands with an excellent mouth, and that his new owner lent to everybody with too great readiness, had become so eager, so sensitive, that he could not be prevented from rushing at obstacles, although all kinds of bits were tried. The horse was, however, sent to the Nantes horse show, but made there the sorriest exhibition, falling, and twice jumping into the grand stand. Afterward his owner forwarded him to me for the Paris meet and wrote: "The horse is greatly changed; the Pau hunts have made him almost crazy over obstacles. It would be best, perhaps, to put him at a canter without making him jump, for fear of making him completely wild." Unfortunately, the horse arrived with a very bad throat that prevented my exercising him as I should have liked. But I subsequently noticed that he feared the rider's hands to the point that he not only did not seek to gain feel of them, but even turned his head around to the rear for fear of meeting them. I took the horse to the riding-school to work him on the longe and again found him tractable, just as I had left him some years before: he passes over the bar on the ground several times without jumping

it, then at o m. 60 about, then once more on the ground at a walk; he did not sweat, thanks to his tractability on the longe; it was of consequence as he still was coughing. After two hours' rest in the stable, the horse was put through the same exercise, but the bar was raised higher; once calmness obtained, which was quickly effected. I removed the cavesson and rode him with a plain pelham. I pass several times over the bar on the ground using great patience in order to get him to step over the bar without jumping it, for he dares not conclude to feel my hands so as to be able to make the jump regularly. Finally, having obtained the result that I sought, I make him pass to the trot and gallop; then the bar is raised to about o m. 40 and I have it jumped at the three gaits. I end with the exercise at the walk over the bar on the ground.

Each of the preceding two lessons had lasted twenty-five minutes and I had acted so as to avoid sweating.

The next day I again exercise, the horse on the longe without riding him, making him clear several times a three-meter water jump, allowing him to take the gallop only during the half circle just before the obstacle and requiring that after the jump the horse take the walk and go freely and even with indifference on the circle. I next go into the riding-school, where, following the procedure indicated, after having begun by passing over the bar on the ground, I succeed in jumping six times and without quitting the gallop a height of one meter, my horse no longer seeking to pull either before or after the obstacle. I end the lesson with the work over the bar on the ground at the walk, and I send the horse back to the stable. After about two hours' rest, I have him brought back; for some ten minutes I longe him; then I mount him and make him jump several 1 m, 20-hurdles. The lessons for the second day's work were ended. While I was riding him I made every effort to compel him to gain feel of my hands. With this object, I had walked him around in the riding-school while making him describe figures, weaving in and out, that forced him to bend his head to the right and left and to come in contact with my hands.

The third day I follow the same procedure as before for my horse; he jumps on the longe and several times the bar raised to 1 m, 30 and the water jump. I was careful to put him at the walk for some meters each time he had made an effort requiring an increased gait. I ride the horse and leap the water jump twice; then I enter the riding-school, where for about half an hour I exercise my horse, making him jump the bar when I encounter it upon my path in the different movements. Finally I jump twelve 1 m, 20-hurdles, without leaving the gallop. The horse is perfectly calm; nevertheless he was slightly heated and as he still coughed I dismissed him.

In the afternoon I go to the horse show to see another of my horses jump and I learn that the man charged with entering this horse had made a mistake and given in the name of *Padley*. I had not the slightest intention of having the latter compete, but meeting a friend in whom I had confidence, I proposed riding the horse to him, assuring him that he would master him. What I said happened; I had a two-fold satisfaction; to have afforded pleasure to a friend who never was better carried over obstacles by a sounder horse, and to see my horse classed first. The successes of *Padley* did not stop there: he competed yet three times, won two trials and was only beaten once by a horse of mine ridden by the same friend.

CHAPTER XI.

HORSE TOO SLUGGISH AT OBSTACLES: CAUSES AND REMEDIES.

The horse, without being too eager, should always go cheerfully at obstacles under penalty of losing dash and often of showing the pause that we have condemned.

If he is too sluggish, he does not exact on the rider's part as much tact as the eager horse, but requires to be quite vigorously handled, especially over the wide jump. Well ridden, he readily judges what he must do, and particularly when it comes to height he jumps safely.

The causes making a horse too sluggish arise from disposition, from a lymphatic temperament, or from the fact that the animal has hunted in regions where he has had to jump much at the walk. In the latter case he surely is well built and has a good mouth; the defect, moreover, is easy to overcome.

If the horse is too sluggish on account of his disposition or lymphatic temperament, it is not completely remediable. We advise having small obstacles jumped a great deal and dwelling upon the wide jump, while vigorously urging the animal at the moment ofumping.

CHAPTER XII.

USE OF THE RIDING-WHIP.

The riding-whip is an aid that should seldom be used.

When I see a horseman make use of it in jumping, I generally conclude that he is not squarely seated in his saddle and that, not having a good seat, he holds on only with his knees and by supporting himself on the stirrups, which paralyzes the action of the legs.

One of the great inconveniences of using the whip instead of the legs is that the animal, that has need of urging, is precisely the one that must be held with both hands up to the instant he springs. As he can not thus be guided while making use of the whip the animal feels that he is not held and profits thereby to avoid.

The riders that use the whip apply it to the horse's flank at the instant of jumping, which often hurls the animal into the obstacle and accustoms him to both. Moreover, they employ it without examining its use, not so much to animate their horses as for better seating themselves by the very fact of the backward motion of the arm, the hand having quit the head so as to use the whip.

This cut of the whip we have often noted, is almost instinctive with an inexperienced man. But it would be preferable to let the hand fall to the rear along the side and avoid giving it, seeing that it generally does harm.

However, the rider should use the whip with horses that refuse to obey the legs.

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MILITARY REFORMS; THE SUPPRESSION OF DRUMS.*

TRANSLATED FROM *Nuevo Mundo*, MADRID,

BY LIEUTENANT W. E. MOULD, EIGHTEENTH INFANTRY.

A MILITARY writer has recently computed the number of drums in our army, and believes it to be so excessive that he recommends doing away with them, at once and finally; there exist at present a little over 2000, and with this number of drums, or, to be more exact, of drummers, he believes that we could form two battalions or two regiments (I forget which) of which, in his opinion, we stand in much need to complete our military organization.

I do not, naturally, understand much about these things, nor whether by restraining these drums our army would lose an effective force, when their cost would form for us the two regiments required; but I presume that their suppression would be a good thing, as such has just been decreed in France, and I am sufficiently convinced that from that country we form all our opinions as to whether or not any change is desirable.

It is then evident that drums must be sacrificed here, as they have been in France, and the only extraordinary thing is that the idea of suppressing them occurs to us so inopportunistically, when the military drummers have yet to break their first drumhead since we established their noisy institution, without which we Spaniards might have lived, or believed we had lived, a long time completely happy.

The reason that this case is a rare one is that we for once anticipated the French by doing without the drums, for a long time keeping step to the bugles beautifully, until a short time ago, five or six years at the most, our technical officers fell into the idea that without drums we could never become a military power of the first order; and although we could not give to our artillery the rapid-fire guns asked for by illustrious soldiers, as a necessity, still the infantry was given these noise-makers which every savage believes to be indispensable in creating panics in the ranks of his enemies.

What is it that has passed during the last five or six years to make these indispensable drums, according to the very technical officers who decreed their indispensability, now a costly burden, perfectly useless and an obstacle to the necessary crowning and finishing of our military organization?

Undoubtedly this must be one of the lessons in military art deduced from the Russian-Japanese War, and if Spanish technical officers continue to make use of the lessons taught by the foreign military, this will not be the only nor the last idea that we will see taken advantage of here. Not much time will pass before they will change the position of a button, or augment the thickness of a trench one or two milimeters, thus placing us two milimeters nearer invincibility.

We must not lament the fact that our technical officers are limited to these minute and purely entertaining labors. Judging by the lack of firmness in their judgments and the great versatility of

*After reading the interesting remarks on "Field-Music" in Captain Ryan's "Observations in Europe," published in the last JOURNAL of the MILITARY SERVICE INSTITUTION, the writer believes that the accompanying translation of an article giving the views of a Spanish writer will be of interest to readers of the JOURNAL.

their opinions, the best that could happen would be for them not to consider deeper things.

Our salvation, then, is in that these trifles exist, and in that the technical officers, by employing their time in deciding, for example, whether the infantryman shall wear emblems or numbers on the collar of his coat, cannot pass to more substantial problems. Wrapped in that of the drums, interesting or at least noisy as it is, they will be sure to resolve it by sentiment and not, as they should, by reflection.

Reasoning normally, this reform, which to prosper would destroy drums and drummers, would not be so very worthless in effect. In common with the suppression or the conservation of military music, it would involve arduous psychological problems of immediate application to the art of war, and very intimately related also to the animal mechanism which is one of the first factors in the art of making war.

In military history there is much interesting data from which to make a study of psychology, and on entering upon it and establishing the necessary relations, one comes to the conclusion that (unless the man is absolutely and completely reasonable, without a trace of the lower animal nature) the drums and music in general can also be, and have often been, important elements in combat.

The exploits of drummers of the Napoleonic epoch alone would furnish material for a voluminous argument directly contrary to the suppression of drums, and a very robust branch of French military literature contains no other subject than the heroism of drummer-boys.

Without appealing to the study of history, but proceeding in a modern manner and giving attention to the experimental method, it is easy to encounter arguments in favor of continuing the drums and even of extending military music. Measuring the work realized and the fatigue produced by similar marches, with and without music, very useful lessons may be deduced contrary to the proposed reform, as experience demonstrates that music and drums have, on the human machine, an effect like that of oil on other varieties of machines.

The historical and the experimental methods, then, seem to be in accord on this point, and to effect the permanent suppression of drums it will be necessary to remedy the essential deficiencies of the past and present, in the manner of making war; to show definitely that personal valor and the resulting valor of masses which music engenders and preserves, are no longer factors in battle; and that battles themselves are nothing but mechanical problems, perfectly solved on a table.

And this is the idea; but much as we have approximated to it, we are still sufficiently distant, and this reform which we now copy from the French turns out to be at least a little premature.

It may be, naturally, that as time goes on this reform will come to be necessary; that is, unless human beings shall have become convinced, prior to this, of the uselessness of war and have done away with armies altogether; a proceeding which would naturally render completely useless the suppression of the drum.

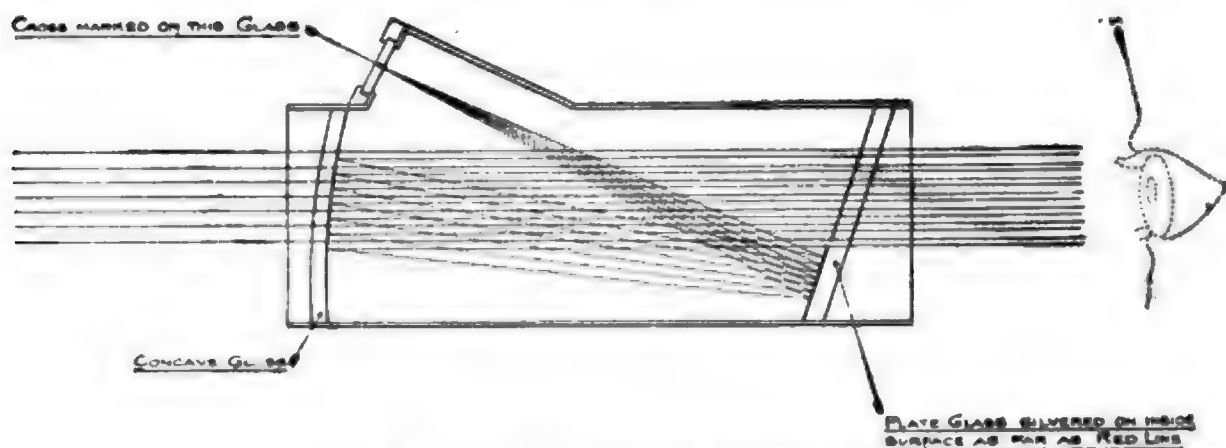


FIG. 6.—OPTICAL PRINCIPLE OF THE GRUBB SIGHT.

THE GRUBB GUN-SIGHT.

A COLLIMATING telescopic gun-sight has been invented by Sir Howard Grubb, which departs so radically from the usual type of sight, that a brief description of its salient features may not be without interest.

As shown in Fig. 6 of the accompanying illustrations, the sight consists of a short metallic tube, the rear end of which is closed by a window of parallel plate glass, the lower portion of which is silvered on the inside, while the upper portion is left perfectly transparent. The front end of the tube is closed by a curved glass, the concave surface of which is coated with a chemically-deposited film, which is both semi-transparent and highly reflective. The curved glass, therefore, acts as a transmitter and a reflector of light. The tube is formed at the top into a hood containing a glass diaphragm, covered with an opaque coating, on which is cut a cross.

The manner in which this optical system works is well shown in Fig. 6. The rays emanating from the target are transmitted both through the front and back windows without refraction, and enter the eye exactly as if there were no sight at all. On the other hand, the rays which enter the eye to form the image of the cross diverge, and are reflected from the silvered portion of the back window on to the concave surface of the front window which, being coated with a reflective film, diverts the rays in question through the transparent upper part of the back window, and thus to the observer's eye. Because of the peculiar curvature of the front window, the rays of the cross are parallelized after reflection, so that they enter the eye as if they had emanated from a large cross on the distant object itself. The cross is, therefore, optically superimposed on the target.

Since the observer's eye is absolutely fixed, there is no necessity for a back sight, which is a very important advantage in itself if the weapon is to be handled in a strained position.

That the virtual or ghost image of the cross is really formed at or near the plane of the object aimed at, is proved by a small photograph in the lower right hand corner of Fig. 1. The photograph was obtained by placing the camera a few feet behind the sight, focusing on the framework of the sight, and exposing the plate. As shown in the picture, the sight body itself is quite indistinct, but the distant views of the dome and the cross are both quite clear,

sight adapted for use with a six pounder naval mounting. The bracket for the sight is constructed so as to fit on the mounting after the removal of the ordinary tangent sight. The appliance is mounted on the top of a radial rack, securely held by and capable of sliding in a socket formed in the sight bracket. A worm wheel and pinion gear serve to elevate the sight rack. Deflection of the sight is arranged for, and consists in training the sight around a center by milled head and screwed in the usual manner.

Fig. 3 shows the instrument applied to a bar sight for a twelve-pounder rapid-fire mounting. In this case the sight is carried above the ordinary back sight, and may be easily and quickly removed, held as it is by a bayonet joint arrangement and a small spring catch.

Fig. 4 shows the sight fitted to a British 0.303 service rifle. The sight does not interfere at all with the ordinary sights, because it is mounted to slide on the face of an arc on the left-hand side of the rifle. The top of this arch is notched, and the notches are cut to correspond with given ranges engraved on the arc. A spring catch holds the sight at any of the notches, adjustment of range being affected by sliding the sight along the arc.

In Fig. 5 the Grubb sight is shown fitted in conjunction with a bar sight of a six-inch rapid-fire mounting, the Grubb sight being carried on an extension of the ordinary sight bar so that it is to the rear and slightly above the ordinary backsight.

THE LOYALTY OF WEST POINT.

The New York Evening Mail.

HEADQUARTERS ATLANTIC DIVISION,
Inspector General's Office,
Governor's Island, N. Y. October 4, 1905.

Editor, *The Evening Mail*.

SIR:—In your Illustrated Saturday Magazine of September 30, 1905, an editorial headed "A University of the Seas," uses the following language:

"It is a noteworthy fact that in the Civil War the West Pointers in the army who were from the Southern States went with their States almost to a man, and became the commanders of the Confederate Army, while the exactly opposite fact was true of the navy; nearly every Southern man in it remained loyal to the flag. One of them, Farragut, a native of North Carolina, became the most famous of the sea fighters for the Union."

It is, to say the least, unfortunate that the opening article of your edition devoted to the United States Naval Academy should contain statements, cited as "noteworthy facts," that are so far removed from the truth as are most of those contained in the quotation given above.

The slur at the loyalty of the graduates of the Military Academy, and the resultant glorification of the loyalty of the navy officers at the period of the outbreak of the Civil War, will not stand the test of investigation. Taking the quotation as a whole, but two of its statements are correct, viz.: That the West Pointers who went South became the commanders of the Confederate Army, and that Farragut became the most famous of the sea fighters for the Union.

As regards Farragut, you are in error in stating he was a native

of North Carolina. David Glasgow Farragut was born July 5, 1801, at Campbell's Station, near Knoxville, Tennessee. This is perhaps a minor error, though I doubt if the State of Tennessee will be willing to lose the identity of her son.

It is, however, to your statement that "the West Pointers in the army who were from the Southern States went with their States almost to a man, while the exactly opposite fact was true of the navy; nearly every Southern man in it remained loyal to the flag." that the very serious objection rests.

The facts in the case are as follows: On December 1, 1860, there were 1108 officers holding commissions in the United States Army. After November 1, 1860, 286 officers of the army resigned or were dismissed, and afterward joined the Confederate Army. Of these 286 officers, 187 were graduates of the Military Academy; sixteen of these graduates were from Northern States, thus leaving 171 army officers, graduates of the Military Academy, appointed from Southern States who left the service to join the Confederate Army.

One hundred and sixty-two (162) graduates of the Military Academy from Southern States in the service at the outbreak of the Civil War remained loyal to the flag, and served in the Union Army. Among these graduates of the Military Academy who were from Southern States, and who remained loyal, were George H. Thomas, of Virginia, major-general, United States Army; S. V. Benét, of Florida, afterward for many years Chief of Ordnance, United States Army; Alvin C. Gillam, of Tennessee, major-general, United States Volunteers; William P. Craighill, of Virginia, afterward Chief of Engineers, United States Army; Robert Williams, of Virginia, afterward adjutant-general, United State Army; William P. Terrill, of Virginia, brigadier-general of volunteers at twenty-nine years of age, and killed at the Battle of Perryville; Junius B. Wheeler, of North Carolina, afterward Professor of Engineering at the Military Academy; Benjamin F. Davis, of Mississippi, who as colonel of the Eighth New York Volunteer Cavalry was killed at the Battle of Beverly Ford; John C. Tiddall, of Virginia, colonel of the Fourth New York Volunteer Artillery; William H. Lewis, of Alabama, killed by Indians in 1878; John Newton, of Virginia, afterward Chief of Engineers, United States Army.

The truth is, that instead of the West Pointers in the army who were from Southern States going with their States almost to a man, as you state, almost one-half of them remained loyal, and fought in the Union Army, the proportion being 171, who went south and 162 who remained loyal.

I am unable to ascertain the exact number of officers of the navy on December 1, 1860. It does not appear in Maclay's History of the navy, nor any other book of reference at hand. Within a few days of the attack on Fort Sumter, of the seventy-eight captains on the active list of the navy, twelve resigned or were dismissed; of the 114 commanders, thirty-nine resigned or were dismissed; of the 321 lieutenants seventy-three resigned or were dismissed; 259 officers of the navy resigned their commissions or were dismissed after the 4th of March, 1861. In all, 322 officers of the navy resigned or were dismissed and went south—actually and relatively a larger number than the West Pointers who left the army and went south.

You are not more happy in your remark that the West Pointers became the commanders of the Confederate Armies, and the infer-

ence to be drawn when you state the exactly opposite fact is true of the navy, adding, "One of these, Farragut, became the most famous sea fighter for the Union."

All honor to the brave Old Salt! But great as were his services on water, they were not of more value to the Union than those of George H. Thomas, of Virginia, graduate of the Military Academy, major Second United States Cavalry, at the beginning of the Civil War, on land.

In the Confederate Navy, as in its army, the leaders and commanders were from the old service. Buchanan, who under George Bancroft, Secretary of the Navy, organized the Naval Academy in 1845; Tattnall, of "Blood is thicker than water" fame; Catesby A. R. Jones, John M. Brooks, S. D. Bullock, J. K. Mitchell, Hunter Davidson, Semmes and Kell of the *Alabama*; and James D. Johnson of the *Tennessee*; these men were undeniably the leaders and commanders of the Confederate Navy, and they came from the old navy.

The loyalty, devotion to duty and prowess of our naval officers at all periods of our country's history are matters of pride to all our people, and we of the army are second to none in our appreciation of the United States Navy. To set forth its value, however, it is not necessary to decry another service, nor to falsify the facts of history, and the United States Naval officer would be the last to justify such action.

In view of the wide-spread circulation of your magazine of September 30th, and the credence placed by your readers on any statement they see in your editorials, the injustice done by such statements as are quoted above is very far reaching. In justice to those graduates of the Military Academy, who appointed from Southern States remained loyal to the Union, sacrificing in many cases all family ties to do their duty to their country, will you not correct the entirely erroneous statements contained in the quotation from your editorial given above?

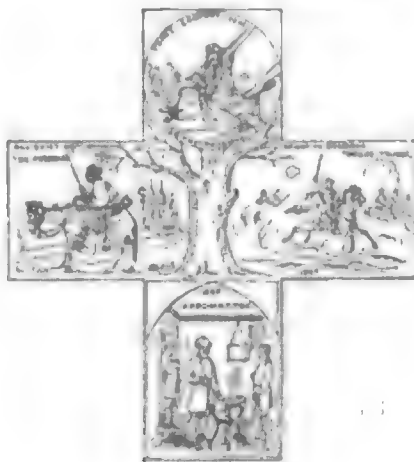
The figures used above are to be found in Cullum's "Biographical Register of the Officers and Graduates of the United States Military Academy"; "The Blockade and the Cruisers," by J. R. Soley, Professor United States Navy; "The Atlantic Coast," by Daniel Ammen, rear admiral, United States Navy; "Life of Admiral Farragut," in the Great Commander Series; and "The Historical Register and Directory of the Army," Heitman.

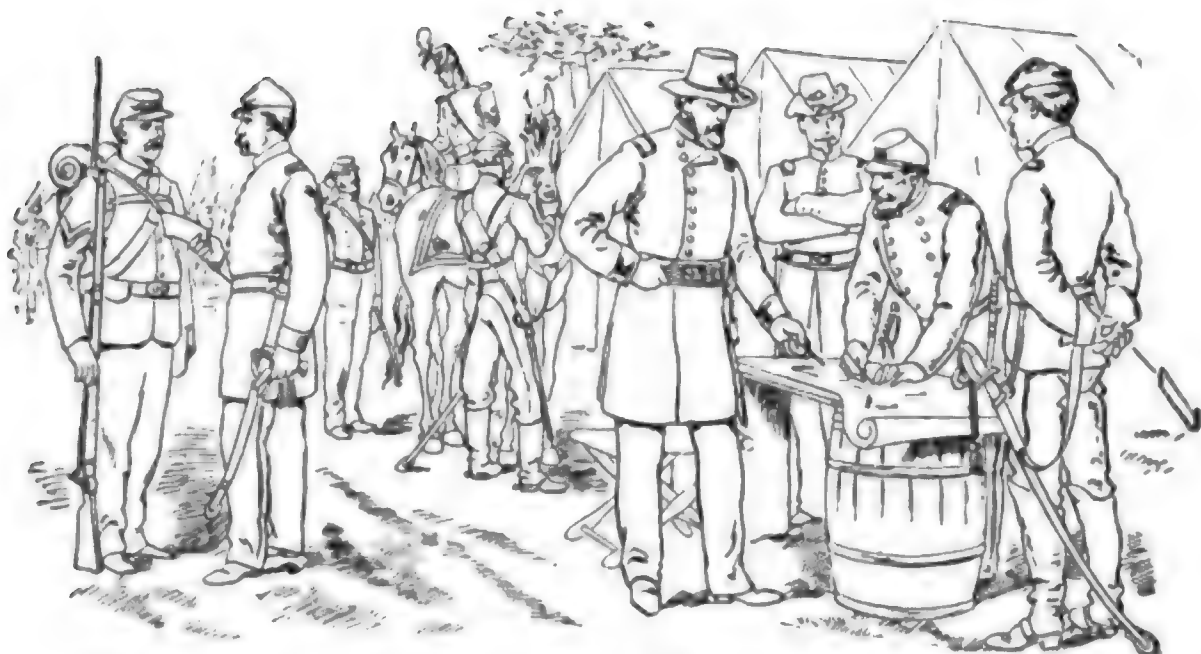
Very respectfully,

(signed) S. C. MILLS,

Colonel, Inspector-General,

Class of 1877, U. S. M. A.





Comment and Criticism.

"The United States Magazine Rifle, Model 1903."

Captain Theo. H. Low, U. S. M. C.

It seems a singular coincidence that the recent modifications of the service type of rifles in both Great Britain and America have called forth such criticisms as to necessitate numerous replies. Various have been the comparisons that have been made, for while Lieutenant Mumma is content to merely show the superiority of the new Springfield over the "Krag" carbine, Major Brown in his valuable article tabulates its advantages over the present rifle. Others even go so far as to suggest that the real question is whether the new type is the best possible, and equal to any that could be evolved by free public competition. Indeed, in England it has become necessary to explain that motives of economy restricted the changes to modifications of the old type.

Many points as shown by Lieutenant Mumma still remain doubtful, some of which might be settled by exhaustive tests which might well be opened to all the classes of shots that would make up our firing line. For even though not most favored by the experts, the rifle that under service conditions proves to be the most effective in the hands of novices might have much in its favor for the troops, and especially of recruits, after a number of days daily firing 400 rounds. In this respect, the Lee Enfield short rifle has the advantage, with no greater energy of recoil than the Krag, in spite of its being the lightest of service rifles, only weighing a couple of ounces over eight pounds.

It seems, indeed, still a question of how much the loss of accuracy and velocity due to cutting off the six inches of barrel will be com-

pensated by the resulting greater handiness and saving of half pound in weight. Probably, however, the limit of the practice of shortening barrels is reached as has the reduction in caliber.

But skepticism as to all claimed for the new Springfield can be excused on the part of one who has never seen it. Perhaps much criticism must be expected until an ideal automatic rifle be placed in the hands of ideal troops.

Captain Herbert Barry, Squadron A., N. G. N. Y.

Members of the National Guard have little or no opportunity to inspect or experiment with the new United States magazine rifle, model of 1903, and generally speaking, their knowledge is derived solely from such accounts of it as they may have read.

The more perfect the arm supplied to the National Guard the greater is the interest that can be developed in rifle shooting, and the better the results that may be attained. Fifteen years ago the arm with which the National Guard was chiefly supplied was the old Remington, which by combining lack of precision with enormous recoil, effectually dampened enthusiasm for target-practice.

The issuance of the Springfield rifle and carbine gave a stimulus to target-practice in the National Guard, which has been greatly increased by the subsequent substitution of the Krag, and within the writer's personal observation quite remarkable advances have been made, both by individuals and by organizations. In the organization with which the writer is most familiar, Squadron A, having a total membership of about 250, the following is a list of the number of sharpshooters qualified each year since 1895; 1895, 21; 1896, 29; 1897, 39; 1898, 29; 1899, 43; 1900, 32; 1901, 40; 1902, 55; 1903, 107; 1904, 107. The large increase of the last two years reflects the interest aroused by the issuance of the Krag carbines.

From the standpoint of the cavalymen of the National Guard, the introduction of the 1903 model rifle will be greatly welcome. The Krag carbine, although an excellent arm, is not on a footing of equality with the Krag rifle. The points of difference are noted in the article of Lieutenant Mumma and the practical effect of these differences is well known to those familiar with both arms. The number of infantry organizations in the guard is large, but there are few of cavalry; the difference in the two arms renders it impracticable for the cavalry and infantry to enter competitions upon an equal footing, and while numerous teams may be readily secured for infantry competitions, the number of teams armed with the carbine being small, there is correspondingly less interest in such events. Another practical disadvantage of the cavalymen is that the study and tabulation of the trajectories and of the effect of light, wind, etc., are made and compiled as to the rifle, and the results are not available for the

carbine. With a uniform arm for both branches of the service, the cavalymen would also enjoy the benefit of such investigation and experiments.

In connection with these desultory remarks, it may not be amiss to mention that while the Springfield rifle and carbine, using a soft lead bullet, lasted for an indefinite time, the present arm, using a steel jacketed bullet, suffers more from the friction of the bullet, and as the lands become worn down, the arm loses very greatly in precision and reliability. The same trouble will undoubtedly be experienced with the new rifle. This deterioration has been so common an experience that at a meeting of the National Rifle Association at Sea Girt during the present season, it became the subject of discussion and the following well-expressed statement of the difficulty was made by Dr. W. G. Hudson:

It is safe to say that every observant rifleman has become aware of two serious difficulties which confront the military shooter of to-day: (a) The obtaining of a good shooting barrel on his Krag, and (b) the rapid wearing out of the barrel after it is obtained, especially if much skirmish or rapid-fire shooting is practiced.

The modern rifleman has acquired a knowledge of how to select a gun which promises good work; therefore, the rifles to-day in the hands of the team men and good shots of a military organization are those selected as the best of the entire allotment of guns to such organization, and this partly explains the remarkable scores which have been so common of late years. Experience shows that only about one out of twenty barrels of service issue conforms sufficiently close to the standard to do the fine work required to win matches nowadays, not to say that the remaining nineteen are unserviceable from a military standpoint, but they will not do the fine work, especially at the long ranges, necessary to win against rifles selected by experts.

This leads to two questions: (1) What are we going to do when these barrels of correct measurement are worn out; and (2) should not some means be placed at the command of even an inferior shot, to whom one of the poorer barrels may have been issued, to obtain a barrel of sufficient accuracy to keep up his interest in the sport? Such a man may eventually become a good shot, but he will never do so, and will speedily lose all interest if his rifle is incapable of fine work when properly pointed. A rifle must be accurate to make shooting a pleasure.

The remedy for this state of affairs is to admit barrels of private make, when guaranteed by an officially appointed, viewer to be in all respects like the standard Government barrel, to all matches on the same footing as the Government made weapon.

This is done in England with satisfaction to all, and it is believed that the same plan would work advantageously in this country also. But the chief reason for urging it at this time is to remove the objection which so many riflemen have to doing much skirmish and rapid-fire practice, through fear of wearing out their barrels; one dislikes to wear out a good barrel when there is small prospect of replacing it. I believe that most riflemen have found their barrels worn out for fine work after less than 1000 rounds have been fired, if much of the

firing has been skirmish and rapid fire-work, and sometimes a barrel will go bad after a few hundred shots.

There seemed to be no dissent from these views, and the meeting adopted the following resolution, which it is hoped may lead to favorable action:

1. That the Executive Committee of the National Rifle Association confer with the National Board for the promotion of rifle practice, with a view to so modifying the conditions of the national matches that barrels of private manufacture may be admitted thereto on the same footing as Government made rifles throughout, providing (a) that such barrels conform in outside and inside measurements, weight, character of rifling, pitch of rifling, number of grooves, and in all other respects, to the standard adopted by the Government; and (b) that such barrels bear the inspection mark of an official appointed in such a manner as said board may deem most expedient, to be known as "View Mark A" or "Government Viewers' Mark," as a guarantee of inspection and conformance to the above requirements.

2. That the present view mark of the National Rifle Association be designated as "View Mark B," and applied as at present to rifles coming under the designation, any military, and also to special barrels which may have been fitted to Government made actions, whose outside dimensions and chambering are the same as the Government barrel and which are capable of using the standard ammunition, but whose rifling may be modified with a view to demonstrating in the annual competition whether the standard form of rifling can be improved upon.

Lieutenant Townsend Whelen, Thirtieth Infantry.

The article of Lieutenant Mumma on the United States magazine rifle, model 1903, is most interesting. It is hoped that many of the expert shots will give their experiences with the new weapon so that we may have at hand as much information as possible before our first target season with it.

I do not believe that Lieutenant Mumma gives enough credit to the sling. In the infantry, where its use is now thoroughly understood, it is given the credit of 15 per cent. improvement in the scores or fifteen points in every twenty shots. In rapid fire in the prone positions its value is probably nearer 25 per cent. Those who have been fortunate enough to be present at the army or national competitions this year will realize at once that there is only one way in which to use the sling and the regulation that it "must be attached to its regular swivels and used in conjunction with the arm only" is a wise one. By all means the sling should be allowed as it is a great factor in good workmanship, in fact, as necessary as the wind gauge. So great is the belief in it in the infantry that most company commanders now make its use compulsory when shooting in the prone position.

The new rifle is certainly more accurate than the model '98 rifle or carbine. Its recoil is considerably greater, and as Lieutenant Mumma says, while this will not be objected to by the expert, it will certainly

increase the difficulty in developing good shots among recruits. I do not believe it desirable, however, to decrease the velocity of the cartridge to remedy this feature. The velocity of the new rifle was increased to 2300 feet per second to keep pace with the improvement in the small arms of foreign powers, and any decrease will certainly work to our disadvantage in this respect. The remedy, I thoroughly believe, lies elsewhere.

One of the gravest faults in the new rifle has been entirely overlooked by Lieutenant Mumma and many other writers on the subject; I refer to the short life of the barrel. The experiments of the Ordnance Department and of individual riflemen show that its accuracy begins to fall off rapidly when from 800 to 1200 shots have been fired from it. These experiments were made in slow fire. When the rifle is used for rapid fire and skirmish the erosion is much quicker. This is due partly to the wearing of the jacketed bullet, but mostly to the intensely hot gases of the large powder charge. A rifle which I had for trial was fired about 1000 rounds, shooting mostly through the marksman's course. During the last 100 rounds the rifle would not hold the four ring at 600 yards. The heat developed during a skirmish run was so great that one could smell the stock burning. The hot gases had fused the bore for about two inches in front of the chamber so that no rifling was visible.

Under present conditions it will be necessary to provide new barrels each target season if any good results are desired. We had too many examples this year of expert shots being ruined by clinging to their old rifles which were completely worn out and unreliable.

The only faults I have to find with the new rifle are the recoil and the short life. I thoroughly believe that the remedy for these is a mid-range cartridge—one having a lesser velocity and a lead bullet which will give accuracy at 600 yards. Such a cartridge a year ago would have been regarded as an impossibility, but riflemen throughout the country have been doing much experimenting and a charge has been evolved which is satisfactory in all respects. It consists of a bullet composed of an alloy of 3 per cent. copper, 6 per cent. tin, 6 per cent. antimony and 85 per cent. lead, weighing 207 grains and having a copper cap placed on the base, the cap covering the sides of the bullet for one-eighth inch from the base. This bullet measures .310 inches, which is .002 inches larger than the standard bore of the rifle. This large diameter is absolutely essential, as unless a perfect gas check is produced, gas cutting will occur and destroy accuracy. The alloy of which the bullet is composed is hard enough to stand the high velocity and the wrench of the ten-inch twist and the copper cap prevents the fusing of the base of the bullet by the powder gases. This bullet is driven by twenty-three grains weight of Laflin & Rand lightning powder, developing a velocity of 1700 feet per second. It gives the same accuracy as the service cartridge, requires about 150 yards

additional elevation on the rear sight and about one-third more allowance for wind. The recoil is almost nothing and it causes no wear at all to the barrel. This load has the advantage that it can be used on ranges where the full charge is unsafe and also that the bullet usually goes to dust on impact and is lacking in penetration. In it we have a charge which is cheaper to produce than the full charged ammunition, which will minimize the "flinching" among recruits and which will save the Government millions of dollars in worn-out barrels. It also has the advantage that it can be reloaded by the rifleman himself—tools for doing so being procurable on the market at small cost.*

I am of the opinion that this character of ammunition should be used in the marksman's course and in all special courses. The marksman's course should then be extended to include a special course to be taken after the regular course, consisting of ten shots slow fire at 200, 300, 500 and 600 yards, with the full charge to accustom all men to the full charge and to allow all to find the elevation and zero of their rifles with the full charge. When a recruit has once qualified as marksman using this mid-range load all his practice after that can be confined to the full charge ammunition, with no danger of developing the flinching habit, in other words, until the soldier qualifies as marksman he uses only the mid-range load, firing in addition forty rounds of full charged ammunition each year at short and mid-range.

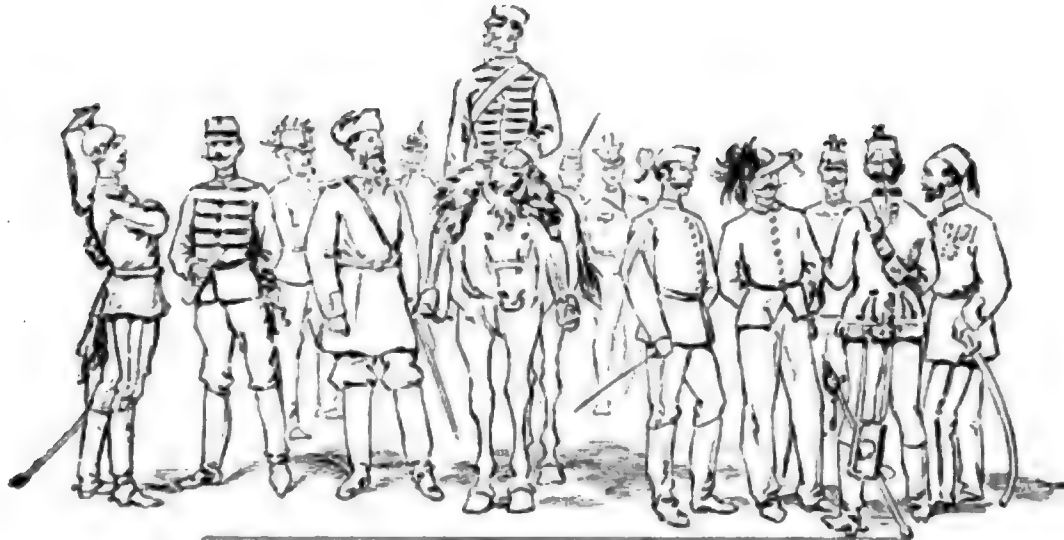
I am well aware that it is very undesirable to conduct range practice with ammunition which is so different from the kind which would be used in war, but I see no other economical way out of our difficulty. It seems to be either a new barrel each year or the mid-range load for recruit instruction.

Lieutenant Mumma evidently used the old form of sight. The new sight just adopted is a big improvement over the old and greatly increases the capabilities of the arm. It is not thought that any change need be made in the cut off. It is pretty hard to set it at exactly the point where the bolt pulls out and if the cut off is thrown boldly and quickly "on" and "off" no trouble will be noticed.

The ammunition which was issued for the new rifle prior to 1905 was defective in the thickness of the jacket of the bullet. In my practice with this ammunition I found that the jacket of about one cartridge in fifty would split and a miss would occur. Lately, however, the thickness of the jacket has been increased from .016 inches to .020 inches and this defect overcome. Thus if one wishes reliable ammunition he should choose that manufactured in 1905 or subsequent date.

The energy of the new rifle is terrific and a new form of frame for skirmish targets will have to be designed as a bullet hitting the present frame cuts it in two instantly.

(For additional comments see page 574.)



Reviews and Exchanges.

The Centennial of the Military Academy.*

DURING May of this year every graduate of the Military Academy whose address was known in Washington was presented with a copy of "The Centennial of the United States Military Academy."

The edition is in two volumes, and contains what may be called the *particular* history of West Point between the years of 1802 and 1902, from the founding of the Military Academy until the celebration of its one hundredth anniversary.

Aside from this, and yet a part of the centennial spirit in which the book is written, there is a vast fund of information relating to every phase of the academic and post-academic life.

There are many illustrations, all of them excellent, and many of the type that suggest cadet days to the oldest living graduate, and the youngest shavetail alike.

In volume I, we find first an introduction by the Superintendent of the Military Academy. This deals largely with the history of West Point since its occupation as a military post, and particularly since the establishment of the Academy. The subject of the anniversary is mentioned in the introduction, and the official order of exercises announced.

The following quotations from the Superintendent's introduction explain themselves:

"The year 1902 marked the completion of the first century in the life of the Military Academy, which was established March 16th, and formally opened July 4, 1802. The close of the academic year was decided upon as the most suitable time for commemorating the anniversary, and the occasion was celebrated with appropriate ceremonies on the 9th, 10th, and 11th days of June.

"The anniversary excited universal interest among graduates, who spared no effort to make it successful. Invitations to it were extended to the limit of securable accommodations at and near West Point, and it was a matter of great regret to all concerned that our means in this respect were not more ample, for the fact denied the Academy the pleasure of receiving and caring for many more

*The Centennial of The United States Military Academy at West Point, New York, 1802-1902. Two Vols. Washington, 1904.

of its friends and well-wishers. A large proportion of the invited guests were present to take part in the ceremonies, and cordial letters of congratulation were received from those whose engagements prevented their attendance."

After the anniversary, it was believed that some record of the meeting of so many graduates should be made—this is thoroughly explained in the following, also from the introduction:

"It was decided to print a permanent memorial of the jubilee of the Academy a volume to be distributed to official guests, to members of Congress, and to the graduates of the institution. The preparation of the volume was put in charge of Professor Larned, Tillman and Wood, a committee of the Academic Board, and the editorial duties were confided to Doctor Holden, Librarian of the Academy. The volume has been printed by order of Congress, and is now published and distributed."

It contains:

I. The addresses of the President of the United States, the Secretary of War, and others before the official guests of the Academy June 11 and 12, 1902.

II. Addresses before the Association of Graduates, June 9th.

III. A series of chapters giving, in brief, the history of the Academy during the period of its existence, of the post of West Point during the Revolutionary period, and of the services of the graduates in military and in civil life. The illustrations and maps which accompany the text have been derived from many sources.

* * *

The chapters have been written by graduates who represent nearly every arm of the services and also civil life. The writers have been invited to express their own judgments in their own way, so that the chapters are personal, not official. At the same time it is believed that they will be welcomed as the first comprehensive and adequate accounts of the many varied activities and achievements of our graduates in every walk of life. Taken together they present a view of its activity of which our country may well be proud.

The President of the United States has said in his address (June 11th):

"This institution has completed its first hundred years of life. During that century no other educational institution in the land has contributed so many names as West Point to the honor roll of the nation's greatest citizens. * * * The average graduate of West Point during these hundred years has given a greater sum of service to the country through his life than has the average graduate of any other institution in this broad land."

Every graduate of the Academy is proud of these memorable words. We believe them to have been deserved in the past. We will do our best endeavor that they shall be true in the future.

This then gives an idea why "The Centennial of the United States Military Academy" should be of such vital interest to all graduates.

Moving beyond the introduction we find about 125 pages devoted to the celebration of the anniversary of the centennial banquet. The addresses of the several graduates who spoke on Alumni Day are herein published in full, and the responses to toasts at the banquet follow shortly after.

As illustrative of the feeling that this event inspired it might be well to state that at the time the centennial banquet was taking

place at West Point another was in progress many miles away in Manila, and yet another in mid-ocean.

Banquet at Manila, June 11, 1902.—On the 15th of April, 1902, there was organized at Manila the United States Military Academy Centennial Association to celebrate the one hundredth anniversary of the founding of the Military Academy. All ex-cadets serving in the Philippine Islands constituted its membership. Its officers were Col. W. A. Rafferty (United States Military Academy, 1865), *President*; Lieut.-Col. George C. Greenough (1865), *Vice-President*; Major H. C. Carbaugh (1882), *Secretary and Treasurer*, and an executive committee composed of these officers, and of Col. W. P. Hall (1868); Capt. E. O. Fechét (1868), Col. C. A. Woodruff (1871), Lieut.-Col. A. H. Russell (1871), Lieut.-Col. G. S. Anderson (1871), Capt. F. de W. Ramsey (1885), B. T. Clayton (1886), W. W. Hart (1889), J. R. Lindsay (1892), J. A. Moss (1894), C. McK. Saltzman (1896), and A. S. Conklin (1897). On June 11th a banquet was given by the association. The menu is a little pamphlet bound in the Academy colors and illustrated with cuts of cadet and of army life. The spirit of the meeting of those graduates, far away from home, is irresistibly suggested by the make-up of the little volume. Here on a single page is the dreary north front of cadet barracks with the row of memorial elms, and below it the palms of Manila surrounding one of the outlying blockhouses for its defense. On another page is a cut of cadet guard-mounting in camp, and below it an automatic gun in action against Filipino insurgents. Both scenes were familiar to the 108 graduates who sat down to the centennial dinner, but their hearts warmed to the views of their rock-bound highland home—their country. It was their duty to serve that country, and with honor, in a distant land. As the United States Army transport *Hancock* was crossing the longitude of 180° W., June 11, 1902, the thirty-four officers present, representing the classes of 1879, 1887, 1888, 1890, 1894, 1895, 1896, 1897, and 1898, and veterans of the Civil War, celebrated the day by addresses and songs in mid-Pacific. Wherever the duty of a graduate called him his heart was with Alma Mater on this memorable day.

Now follows "The History of West Point, of the Military Academy and of the services of its graduates in war and peace.

In the table of contents we are directed to chapters of varied information, but of the most unqualified interest to one who wishes to know what the Academy is now, and what the Academy has been in its first hundred years of life.

Below I give some of the subjects dealt with:

"Origin of the Military Academy."

"Academic History of the Military Academy,"

"The Genius of West Point,"

"The Services of Graduates in the Various Wars,"

"The Services of Graduates as Explorers, Builders of Railways, Canals, Bridges, and the Like,"

"The Services of Graduates in Civil Life,"

"The Physical Training of Cadets,"

"Athletic Sports at the Military Academy."

All this and more is contained in the first volume, while in the second volume we find:

"Bibliographies of West Point (1694-1902) of the Military Academy (1776-1902), and of the writings of graduates (1802-1902)."

"List of Graduates United States Military Academy," etc., etc.

To those who were present at the centennial celebration the volumes will be a record of very entertaining and wholly cheerful recollections.

To the ones who were unable to attend (and they are in the majority) the work should be of incalculable value. Viewing the centennial volume from the standpoint of one who was not present at the reunion of graduates, I would say that we have nothing in history, sentiment or fact, more thoroughly our own.

W. I. WESTERVELT,
First Lieutenant, Artillery Corps.

History of the Thirteenth Infantry.*

CAPTAIN McALEXANDER, in his history of the regiment, has set a pace that other regimental historians will find it difficult to surpass. It may be doubted, too, if all regiments possess a regimental press capable of turning out so good a specimen of the bookmaker's art. The binding and maps are the work of outside offices, but the generous pages, clean type, well spaced, wide margins, and firm paper show the work of the regimental press and make it a pleasure to handle the book. It invites your attention by its personal attractions, and then lives up to its appearance, which is not always the case.

There are sixty-five illustrations, embracing portraits of sixty-eight named officers, two sergeants and one private of the regiment, as well as group pictures of the regimental non-commissioned staff and band, and the twelve companies which are now in the regiment. There are maps of the United States, Chickasaw Bayou, Arkansas Post, Vicksburg, Santiago de Cuba and vicinity, the San Juan battlefield and of the Province of Pengasinan, Luzon—all of which are illustrative of deeds of the regiment.

A notable illustration is of the regimental color, on which is inscribed "First at Vicksburg," this inscription being the result of the proceedings of a board of officers convened by G. O. No. 64, Headquarters Fifteenth Army Corps, Camp Sherman, August 5, 1863, to determine the honors to be awarded to the various regiments for their deeds in the assault on Vicksburg. The award of the board was as follows:

"The board find the Thirteenth United States Infantry entitled to the 'first honor at Vicksburg,' having in a body planted and maintained its colors on the parapet, with a loss of 43.3 per cent., including its gallant commander, Washington, who died at the parapet. Its conduct and loss, the board after a careful examination believes unequaled in the army, and respectfully ask the general commanding the department to allow it the inscription awarded."

A gallant tribute to a regular regiment, awarded by a board consisting of one brigadier-general, two colonels and one first lieutenant of the United States Volunteers.

In the reading matter, three chapters are devoted to the organization of the regiment in the spring and summer of '61, and its

**History of the Thirteenth Regiment, United States Infantry: Compiled from Regimental Records and Other Sources.* By U. G. McAlexander, Captain; Adjutant, Thirteenth Infantry Regimental Press, Thirteenth Infantry, Frank D. Gunn, 1905.

experiences during the Civil War; two chapters to the period from the Civil War to the war with Spain, one chapter to its service in Cuba in '98, and four chapters to Philippine experiences of the regiment. Then follows a chapter on "Military Commissions and Provost Courts in the Philippine Islands," by Capt. Harvey W. Miller, Thirteenth Infantry.

A chapter is devoted to the history of the other regiments of the same number in the United States Army. Of these there have been three—one organized for service in the anticipated war with France, 1798, one for the war with England in 1812, and one for the war with Mexico in 1847.

The last chapter in the book is headed "Incident and Comment," and it preserves a number of regimental traditions and stories which are well worth preserving.

Captain McAlexander, in his preface, cites the modesty of those who participated in great deeds as an obstacle to the preparation of his history. It is a pity officers do not more generally write out their reminiscences. After twenty years' knocking about, most officers have a fund of incident illustrative of the duties, joys and amusements of the service, and of the *personnel* thereof that is of unfailing interest. Official reports give a bare, bold outline of what has taken place, but such a letter as that of a former captain of the regiment, given on page seventy-three *et seq.*, will have the attention of the average reader who will not turn the pages to read official reports.

All regiments have their unofficial life, with a wealth of material in it which should be preserved for the instruction and amusement of those who follow after.

The Thirteenth is to be congratulated on its historian, and Captain McAlexander on the successful result of his labors.

S. C. MILLS,

Insp. Gen. Dept.

A Monster Heroism.*

"PORT ARTHUR," by Richard Barry, is an account of the investment and capture of that stronghold by the Japanese Army in the war just ended.

The story, so vividly told, is a splendid piece of descriptive writing, and as the author was one of the correspondents with the Japanese Army, the account naturally has a strong Japanese flavor; yet the many references to Russian bravery and Russian achievement bespeak the author's impartiality.

The opportunities of the author, who is evidently a keen observer, to study the high Japanese officials with whom he came in contact, as well as the men in the ranks, give especial value to his estimates of the ability and character of the Japanese people.

The volume is well printed and illustrated with exceedingly good reproductions of very artistic pictures.

H. O. S. H.

*Port Arthur—A Monster Heroism. By Richard Barry. New York: Moffat Ward & Co., 1905.

Hernando de Soto.*

ALTHOUGH De Soto has been dead more than three hundred years, everything relating to his remarkable career continues to excite our interest. The volumes which are the subject of this review contain the narratives of the "Gentleman of Elvas," "Biedma," and "Ranjel." The latter was private secretary of De Soto, and his diary is here published in English for the first time. The editor in his introduction to these narratives says that the object in publication has been to place within the reach of everyone interested in the subject the three most important contemporary sources relating to the expedition of De Soto. The "Gentleman of Elvas" tells us "that on Sunday the 18th day of May in the year 1539 De Soto sailed from Havana with a fleet of nine vessels. On Friday the 30th they landed in Florida and commenced explorations into the interior. They found the Indians exceedingly ready with their weapons, and so warlike and nimble that they had no fear of footmen, for if these charge upon them they flee, and when they turn their backs they are presently upon them." The narrative of the "Gentleman of Elvas" is filled with varied and interesting details of De Soto's great expedition, and of the hardships and meetings with Indians that were encountered by him and his followers.

Ranjel writes "Saturday, the last of April, 1540, the army set out from the place of barricade and marched nine days through a deserted country and by a rough way, mountainous and swampy, until May 8th, when they came to the first village of Quizqui, which they took by assault and captured much people and clothes; but De Soto promptly restored them to liberty and had everything restored to them for fear of war, although that was not enough to make friends of these Indians. A league beyond this village they came upon another with abundance of corn, and soon again, after another league, upon another likewise amply provisioned. There they saw the 'great river' (the Mississippi). Saturday, May 21st, the force went along to a plain between the river and a small village, and set up quarters and began to build four barges to cross over to the opposite side. Many of these conquerors said this river was larger than the Danube."

In the narrative by the "Gentleman of Elvas" the death of Hernando de Soto is chronicled as follows:

"The 'governor,' conscious that the hour approached in which he should depart this life, commanded that all the King's officers should be called before him, the captains and the principal personages, to whom he made a speech. He said that he was about to go into the presence of God, to give account of all his past life, and since He had been pleased to take him away at such a time, and when he could recognize the moment of his death, he, His most unworthy servant, rendered Him hearty thanks. He confessed his deep obligations to them all, whether present or absent, for their great qualities, their love and loyalty to his person, well-tried in the suffrance of hardship, which he ever wished to honor, and had designed to reward, when the Almighty should be pleased to give him repose from labour with greater prosperity to his fortune. He begged that they would pray for him, that through mercy he might be pardoned his sins, and his

**Narrative of the Career of Hernando De Soto.* 2 Vols. Illustrated. New York: A. S. Barnes & Co. 1904.

soul be received in glory. He asked that they would relieve him of the charge he held over them, as well of the indebtedness he was under to them all, and to forgive him any wrongs they might have received at his hands. To prevent any divisions that might arise, as to who should command, he asked that they would be pleased to elect a principal and able person to be governor, one with whom they should all be satisfied and, being chosen, they would swear before him to obey; that this would greatly satisfy him, abate somewhat the pains he suffered, and moderate the anxiety of leaving them in a country they knew not where."

Everyone interested in the explorations of De Soto or in the history of the period when Spain was in America will find these narratives as interesting as the romance of "Robinson Crusoe."

E. H.

The Giant of Three Wars.*

THAT Winfield Scott possessed many of the characteristics of a truly great man, in addition to being a great soldier, is readily determined by those who read the history of his life and are familiar with the period of his active work, but in these latter days when heroes replace each other almost as rapidly as the nights follow the days, there are many who do not take the time to think of those whose sacrifices and achievements a few generations back contribute to the happiness and contentment now enjoyed, unless special attention is drawn to them. To these persons such a book as this short biography of General Scott by James Barnes is especially valuable.

The work is so condensed that only the most prominent events in the life of General Scott are recorded, but it is sufficient to remind one of the difficulties he overcame in establishing his place in history and working his way into the affections of the American people.

The book is one which should especially be in all school libraries and is an excellent one to be read by the busy man who has permitted daily cares to crowd from his mind a knowledge of the life and achievement of one of the nation's earlier idols.

The volume is well printed and tastefully bound. Four artistic drawings by Gordon H. Grant admirably illustrate as many incidents related in the text.

H. O. S. H.

Slocum and His Men.†

THIS book is a valuable contribution to the history of the Civil War. Very compact, it is full of information, absolutely accurate. The Twelfth Corps is fortunate in its historian. The biography of Maj.-Gen. Henry Warner Slocum matches well with the story of his men.

Slocum and his men did their duty to the full in the Army of the Potomac until after Gettysburg and thenceforward in the West. At

**The Giant of Three Wars: Life of Gen. Winfield Scott.* By James Barnes (Ill.) New York: D. Appleton & Co., 1903.

†*In Memoriam—Henry Warner Slocum—1826-1894.* Published by authority of the State of New York, under the Supervision of the N. Y. Monuments Commission. Albany, 1904.

Antietam they preceded Sumner's Corps and suffered severely, losing among others their fine old veteran commander, General Mansfield. At Chancellorsville, too, they had a strenuous time of it. At Gettysburg, the corps was split up and "bucketed about" in a bewildering way, but its fraction, wherever placed, were barriers impassable to the Confederates. The "bluff" of Greene's Brigade—a mere skeleton—on the night of July 2, 1863, saved our right flank, to which our reserve artillery and line of supplies were perilously close. There was nothing spectacular about that fierce fight of a mere skirmish line in the dark, but it served as good a purpose as the occupation of Little Round Top under General Warren, the advance to the Salient by General Sickles, which disconcerted the plans of Longstreet to turn our left, the sacrifice of the First Minnesota by General Hancock, or even the repulse of Pickett. In the Chattanooga campaign, the Twelfth Corps was conspicuous in the famous "Battle above the Clouds" and then "from Atlanta to the Sea" and from the sea to the final surrender the "star" corps achieved much and earned deserved glory.

The life of General Slocum cannot well be summarized. The book tells of his troubles in and before the war. Those troubles continued after the war, but he triumphed over all. Very unselfish and modest, he was stubbornness personified in holding to what was right. The expression for which he is most famous was simply characteristic. At the famous council of war at Gettysburg, when gallant generals had an idea that perhaps it might be well to retire to Pipe Creek, Slocum's words were, "Stay and fight it out." All his life he was unbudgeable, but he was appreciated. A fine equestrian statue of him has recently been erected in Brooklyn, N. Y., where he lived and died.

The book is handsomely bound in buckram, with numerous excellent illustrations, four elaborate maps of Antietam, Chancellorsville, Gettysburg and Lookout Mountain, and a fine portrait of General Slocum for a frontispiece.

O'G.

Dictionary of Battles.*

THIS volume is a handy and useful reference book in which the author has gathered data relating to about two thousand of the great or decisive battles of the world. Beginning with the earliest known conflicts, the list is brought down to include the earlier engagements of the Russo-Japanese War, just ended. The list is arranged alphabetically. From comparisons made with standard works the information is found to be reliable. The best idea of the character of the work can be given by reprinting the data regarding a single one of the battles chosen at random, for instance:

"LEUTHEN (SEVEN YEARS WAR).

"Fought December 5, 1757, between 33,000 Prussians under Frederick the Great, and 90,000 Austrians, under Prince Charles, of Lorraine and Count Daun. Frederick made a feigned attack on the Austrian right wing, and then under cover of ground withdrew the

**Dictionary of Battles, From the Earliest Date to the Present Time.* By Thomas Benfield Hurbottle. New York: E. P. Dutton & Co., 1905.

major part of his force, and strongly attacked the Austrian left, which was driven back and finally overthrown by a charge of cavalry. The Austrians lost 7000 killed and wounded, 20,000 prisoners, including three generals and 134 guns. The Prussians lost 5000 killed and wounded. In consequence of this victory, Breslau surrendered to Frederick, with over 18,000 troops, on December 10th."

H. O. S. H.

1815—Waterloo.*

THIS interesting translation of the work of a member of the French Academy is thorough from the standpoint of the subdivision of topics and their order. From the efforts of Napoleon to create an army on his return from Elba, to the rout of the army on the night of the 18th, the movements and contacts of troops are fully described, and with great fairness from the French point of view, although much of the responsibility for the result, usually laid upon the Emperor, is placed upon his subordinates.

Fighting the battle over, he thinks that if d'Erlon had not been a half hour late, Vandame over three hours, and Ney too circumspect, the army would have been across the Sambre River before noon, and Blücher and Wellington would have been separated over twenty leagues. Again, if his subordinates had been properly inspired, Ligny would have become a crushing blow. Grouchy, he describes as acting like a blind man, and whom Napoleon did nothing to enlighten. Napoleon relied on Grouchy to close in on his right, but not until one o'clock on the day of Waterloo did Napoleon despatch the order to Grouchy to do so.

The work is a scholarly and valuable addition to the literature of Waterloo, and a summary of the conduct of the Emperor will indicate its manner of execution.

He says: "Never did Napoleon exercise more effectively the command, and never was his action more direct. But, obliged precisely to play that rôle of *sergent de bataille*, which is condemned by Maurice de Saxe, he employed himself entirely in repairing the mistakes, the forgetfulness and the faults of his lieutenants. And, seeing all his combinations miscarrying, all the attacks proving unsuccessful, his generals wasting his finest troops, his last army melting away in their hands, and the enemy laying down the law to him, he lost resolution with confidence, hesitated, confined himself to providing for the most imminent perils, awaited the hour, allowed it to pass, and dared no risk all in time to save all."

C. E. L.

The Post Exchange.

THE above is the title of a volume by Captain F. S. Armstrong United States Army, published by the Franklin-Hudson Publishing Company. As stated in the beginning, the book will be of great assistance to all post exchange officers, especially when they have been detailed in charge of their first exchange.

It contains notes on methods of buying, selling, marking, checking,

**Waterloo*. By Henry Houssaye, translated by S. R. Willis, published by Franklin-Hudson Publishing Co., Kansas City, Mo., oct. and pages 268.

—in fact on everything pertaining to the conduct of an exchange, and ends with a very simple and practical method of keeping books, which, if followed, would do much to simplify and unify the various systems now in vogue in the army.

Sample pages of the books and blanks to be used in the transaction of business are included in the volume.

E. M. J., JR.

Hester of the Grants.*

THIS tale of romance is set in the frame of the incidents of the Revolutionary War about Bennington. Stark, his observation about Molly, Ethan Allen and his bold request to Parson Dewey, who, at meeting, gave God the glory for Ticonderoga, to please make mention that he was there, Tories, Patriots, spies and lovers, all find place and plenty to do in the course of the pages of the novel. The authoress is the daughter of General Peck, for many years Adjutant-general of Vermont, and has brought to the construction of her story a fund of historical data and a patriotic enthusiasm worthy of a true Green Mountain girl. The stirring incidents of war are deftly interwoven with the gentler experiences of the heroine. It is an excellent example of a clean-cut American novel, full of action and of absorbing interest throughout, and may be safely recommended to holiday book buyers.

*HESTER OF THE GRANTS. By Theodore Peck (Oct. p. 429, Fox Duffield & Co. New York, 1905.)

COMMENT AND CRITICISM.

(Continued from page 564.)

"The Caliber of the Revolver."

Le Chef d'escadron d'Artillerie Ferrus, Directeur "Revue d'Artillerie."

Among the interesting articles contained in the JOURNAL OF THE MILITARY SERVICE INSTITUTION of March and April, 1905, I have read with much pleasure the article "The Caliber of the Revolver," by Major Bullard.

I believe that this officer is perfectly right to fight against the revolver of small caliber, having besides the experience of the war, when the revolver was considerably used. We have fallen in the same error like a great many other armies, with our revolver of 8 m.m. (.32) and I wish to make my comrades of the French army acquainted with the arguments of Major Bullard, consequently ask for authority to publish in the "Revue d'Artillerie" the translation of Major Bullard's article.

Our Exchanges.

Military.

Journal of the Royal Artillery.—(July.)—The R. A. Regimental Plate at Woolwich. The Field-Gun of 1905. Searching Areas. The Organization, Equipment and Employment of Garrison Artillery Companies. (Aug.)—Principles that should govern the allotment to, and the employment in, Coast Fortresses, of Light Q. F. Guns, etc. R. A. Regimental Plate, etc. (Sept.)—Proposal to add 12-inch B. L. Guns to Armament of First-class Fortresses. Principles that should govern the Allotment to, and the Employment in, Coast Fortresses of Light Q. F. Guns. Why have we returned to Case 1? The Construction of Tactical and Strategical Schemes and Problems. Discipline.

Journal of the Royal United Service Institution.—(June.)—Comparison between Continental and English Methods of Military Education. To Lhasa with the Tibet Expedition, 1903-1904. Manual of Instruction in Field Works for the Japanese Infantry. (July.)—French Second-class Armored Cruiser *Chancy*. The Militia in 1905. Possibility of Our Fleets and Harbors being Surprised. Organization and Work of Army Corps. Division and Brigade Staffs in the German Army. A Brief Historical Sketch of the Irish Infantry Regiment of Dillon, etc., in Service of France. (Aug.)—Modern Military Rifles. Volunteers in 1905. Royal Military College of Canada. Indian Sibahdar Cavalry. (Sept.)—Comfort of Troops on Active Service. Imperial Yeomanry in 1905. Formation of a Royal Army Reserve Staff Corps of Officers for British and Indian Armies. How Shall We Deal with the Wounded in a Naval War. Official Records of the Union and Confederate Armies.

Journal of the Association of Military Surgeons.—(July.)—The Needs and Advantages of an International Congress of Military Surgeons. Camp Sanitation. U. S. Naval Medical School. Military Hygiene, Its Theoretical and Practical Study in the Regular Army and Militia Forces. (Aug.)—Organization and Operation of the Medical Service at the Front in Modern Warfare. The Sanitary Sergeant. Surgical Experiment after a Venezuelan Battle. Experiences of a National Guard Regiment in Maneuvers at Manassas. Medication on the Firing Line. The Surgeon of the National Guard. The Use of Motor Wagons in the Medical Service at the Front. (Sept.)—Sanitary Study of Culebra as a Naval Base. Military Medical Education. Perforating Gun-shot Wound of the Stomach. Note on Tropical Dysentery. (Oct.)—Observations on the Treatment of Fractures. Relations of the Medical Department to the Health of Armies. First Aid to the Wounded in Naval Battles. Chest Wound by a Krag Rifle, etc. Construction in, and Equipment of Military Hospitals for Contagious Diseases. The Medical Officer in Campaign.

Journal of the United States Cavalry Association.—(July.)—The Resources of Russian Railroads in Peace and War. Five Years a Dragoon, '49 to '54. Effectiveness of Rifle Fire Target Practice. Scouts. Visual Drill Signals. (Oct.)—The Service Pistol and Its

Caliber. Pistol Shooting. Some Indian Experiences. Yellowstone Expedition of 1873. Five Years a Dragoon—'49 to '54—Cont.

Journal of the United States Artillery.—(May.)—Coast Artillery. Projectiles. Targets for Coast Artillery Practice. Mobile Artillery

Journal of the United States Infantry Association.—(July.)—Athletic Training. Rôle of the Machine Gun in Modern War. A Militiaman's View of the Manassas Maneuvers. National Guardsman's View of Manassas. Reserves, Districts and Mobilization. Imperial Chinese Infantry. Company Cooks and Kitchens. The New Marching Shoe. Why Captains of Infantry Should be Mounted. (Oct.)—The Recruit Depot, Columbus Barracks. Field Service in Mindanao. Marching. Rôle of Machine Guns in Modern War. Annual Athletic and Gymnastic Tests for the Army. Physical Training in the Army. How to Obtain a Good First Sergeant. Plea for the Emergency Ration. Elevation and Windage Charts. Combination Intrenching Tool and Wire Cutter.

Journal United Service Institution of India.—(April.)—Circumstances Which Determined such Extensive Employment of Mounted Troops in the Latter Phases of the Boer War, etc. The Two Sieges of Bhurtpoor. Russian Strategy in Manchuria. Can Cavalry Charge Unbroken Infantry? Scheme for Facilitating Inter-Communication During Action. Route Marching. Military Snow-Shoeing in Sweden. Notes of Training of British Infantry Scouts in Reconnaissance.

Proceedings of the Royal Artillery Institution.—(June.)—An Epitome of the Afghan War: 1878-'79 and 1879-'80. A Neglected Item in Tactical Problems of the Future. Royal Artillery and Army Topography. Scheme for Controlling Battery Fire from a Distance. Targets and Models for Instruction in Barracks. Protection for Infantry in Action.

Revue Militaire.—(Aug.)—New German Military Laws of April, 1905. Reorganization of the English Army. (Sept.)—Recruiting of the Officers in Prussia. Law and Legislation on the Status of the Non-Commissioned Officer of the Italian Army.

Revue de l'Armée Belge.—(May-June.)—Notes Concerning the Russo-Japanese War. Employment of Reserves on the Battle-field. Military Art at the Exposition of Lige.

Revue d'Artillerie.—(Aug.)—Sick and Wounded in the Japanese Army. New Heavy Rapid-firing Field Howitzers of the German Army.

Royal Engineers Journal.—(July.)—New Measurements of the Distance of the Sun. Railways in War. Organization of Engineers for an Infantry Division. Landing Operations at the Essex Maneuvers, 1904. Search-lights in Recent Night Operations at Chatham. The Army System of Correspondence. Turbine on Atlantic Steamers. (Aug.)—Training and Organization of Military Engineers. Organization of Royal Engineers for War. Army Railway Organization. The Siberian Railway. Battle of Telissu or Vafangu. Design of Tall Chimneys. (Sept.)—The R. E. South African War Memorial. Short Sketch of Napoleon's Campaign in Italy, 1796-'97. Military Education in the U. S. of America. Rifle Ranges. Engineers of the Spanish Army. Persian Deserts and Gardens.

United Service (New York).—(July.)—Diary of a Canoe Expedition into the Everglades in 1842. *The Times History of the War in South Africa*. The Art of War in '62. Shiloh. (Aug.)—First March of the Fifth Infantry in Montana. Battle of the Sea of Japan. Retribution of Doña Clara. (Sept.)—Strategy and Tactics of the Russo-Japanese War. The Contest for Sea-Power. The Modern War, etc. Old France and Young America. British Naval Policy and German Aspirations. Strategy and Tactics of the Russo-Japanese War. Military Reminiscences of the Rebellion.

United Service Magazine (London).—(July.)—The Japanese Trafalgar. The Future of Submarine Mining. Can Coast Artillery be Manned by Volunteers? Russo-Japanese War. Minor Expeditions of the British Army, 1803 to 1815. The First of the Great Drives. Military Engineering in Peace and War. Entrenching and Range-finding. Cavalry Regiments. The Armory System in New York. The Sword and the Pen. Notes on Imperial Federation for Defence. (Aug.)—Biassed Criticism. Speed. Battle of Trafalgar. Minor Expeditions of the British Army, 1803-1815. Russo-Japanese War. Transmission of Orders and Information in War. The Price of Peace. The Short Rifle. Result of Bad Shooting. Jobbery under Arms. The Underpaid Army Officer. The Case of the N. C. O. (Sept.)—Notes on the Principles of Naval Battle Tactics. The Evolution of Modern Signalling. The Passing of Port Royal. Speculations with Regard to Possible Developments of Mechanical Appliances in Warfare. Minor Expeditions of British Army, 1803-1815. Russo-Japanese War. A Permanent Army on Permanent Principles. The Gods of War. Regimental Officers. Failure of the Double-Company System. The Training of the Soldier. (Oct.)—Nelson and Trafalgar. He was a Man to Love. Personality of Nelson. Recent Calumniators of Nelson. The Standard Nelson and His Times in His Relation to Our Empire To-day. Imperial Defence. Nelson's Tactics at Trafalgar. The Militia—Its Past and Future. Early History of the Yeomanry. Volunteers a Century After Trafalgar. Canadian Militia, Past, Present and Future.

Naval.

Proceedings of the United States Naval Institute.—(June.)—The Truth about Naval Administration. Desertions from the Navy. The Submarine as an Enemy. Promotion, Present and Prospective. Addendum to "Operations of the Navy and Marine Corps in the Philippine Archipelago, 1898-1902."—(Sept.)—Compromiseless Shippo. Commodore Biddle's Visit to Japan in 1846. Draft of a Bill for increasing the Commissioned Personnel of the Line of the Navy. The Naval Academy Miniature of John Paul Jones. Aid to Systematic Firing of Marine Boilers. A Personal Error in estimating the Direction of a Sound. William Chauvenet and the U. S. Naval Academy. The Battle of the Sea of Japan. Recoil.

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- The Post Exchange.* By Captain F. S. Armstrong, U.S.A. (Kansas City, Mo.) Franklin-Hudson Pub. Co., 1905.
- The Prevention of Disease in Armies in the Field.* By Robert Caldwell, F. R. C. S., D. P. H. Major R. A. M. C. (New York.) William Wood & Co., 1905.
- History of the Thirteenth U. S. Infantry.* By U. G. McAlexander. Captain, Adjutant Thirteenth Infantry. Regimental Press Thirteenth Infantry., 1905.
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- Catechism on Field Training.* Third Edition. By Major S. T. Banning, Royal Munster Fusileers. Gale & Polden, Ltd., 1905.
- Notes and Suggestions of the New Infantry Drill Regulations.* By Capt. M. B. Stewart, Eighth Infantry. Senior Instructor Infantry Tactics U. S. Mil. Academy and Capt. R. C. Davis, Asst. Instructor U. S. M. C. (Kansas City, Mo.) Franklin-Hudson Pub. Co., 1905.
- Annual Reports of the War Department for the Fiscal Year ended June 30, 1904.* Vol. XI. Report of the Philippine Commission. Part I. (Washington.) Gov. Printing Office., 1905.
- The Provisioning of the Modern Army in the Field.* By Col. Henry G. Sharpe, Asst. Com., Gen. U. S. A. (Kansas City, Mo.) Franklin-Hudson Pub. Co., 1905.
- The China-Japan War.* By Vladimir, lately of the * * * Diplomatic Mission to Korea. (Kansas City, Mo.) Franklin-Hudson-Pub. Co., 1905.
- The Truth about the War.* By J. Taburno. Translated by Victoria von Kreuter. (Kansas City, Mo.) Franklin-Hudson Pub. Co., 1905.

Editor's Bulletin.

Return
of
Confed-
erate
Flag.

A pleasant incident in the history of the Institution, since the issue of the last number of the JOURNAL, was the return of the battle flag of the Eighteenth Alabama Infantry, C. S. A., which was deposited in our Museum many years ago by the late Major-General S. Wiley Crawford, who commanded a division of the Fifth Corps, Army of the Potomac at Gettysburg and Five Forks. The flag was inscribed, "*Shiloh*," "*Farmington*," "*Blackland*." The correspondence relating to the matter follows:

STATE OF ALABAMA,
DEPARTMENT OF ARCHIVES AND HISTORY.

"September 12, 1905.

"My dear Sir:—I have the honor to acknowledge the receipt of your valued favor of the 8th inst., advising me of the return to this State of the flag of the 18th Alabama Regiment by the Military Service Institution, of which you are Secretary. The flag reached us promptly.

"In behalf of the State, it now gives me very great pleasure to thank your Executive Council for its patriotic conduct in the premises. I also desire to thank you for your good offices in hastening favorable action.

"Herewith I enclose clipping from the *Montgomery Advertiser* of the 9th inst., in which will be found an account of the receipt of the flag.

Very respectfully,

THOMAS M. OWEN.

THE SECRETARY,
MILITARY SERVICE INSTITUTION,

SENDS BACK THE FLAG.

Montgomery Advertiser.

The flag of the old Eighteenth Alabama Regiment, which signalled to battle so many of the Confederate braves of this section of the State, now nestles in the pennant collection of the Alabama Department of Archives and History, having been received yesterday by Governor Jelks from the Military Service Institution of the United States at Governor's Island. The flag was obtained principally through the endeavors of Dr. Thomas M. Owen, director of the department.

The bunting, with its torn and tattered folds, was received through the mails, having been sent by Brigadier-General T. F. Rodenbough, of the United States army, secretary of the Service Institution. It was through the kindness of a lady in New Orleans that Dr. Owen was informed of the flag being on exhibition in the museum of the institution. She happened to see it while on a visit to New York and Governor's Island.

Her discovery was reported to Dr. Owen who immediately thereafter began negotiating for its return here. The lady's information came through General George P. Harrison, of Opelika, Commander of the Alabama Division of Confederate Veterans, whom she wrote in regard to the matter.

An answer to a letter of inquiry sent by Dr. Owen, revealed that the secretary of the Institution would consider the proposition and it was found by a meeting of the Executive Council that there was no objection to the flag being returned to Alabama. Previously Governor Jelks had been requested by Dr. Owen to correspond with the secretary and use his influence for obtaining the relic, and it was to the Governor that the following reply was sent:

"THE MILITARY SERVICE INSTITUTION OF UNITED STATES

"Governor's Island, N. Y., September 7.

"To His Excellency, the Governor of Alabama,

Montgomery, Ala.:

"Sir:—Some time since a communication was received from Thomas M. Owen, LL. D., Director, State of Alabama, Department of Archives and History, inquiring if it would be possible for the Military Service Institution to return to your State the flag of the 18th Alabama regiment, C. S. A., then in our museum.

"At a meeting of the Executive Council of the Institution, held August 18th, I was instructed to return the flag to the Governor of Alabama as requested.

"In accordance with the resolution I have this day forwarded by mail, under separate cover, to your address, the flag in question, of which please acknowledge receipt.

"Very respectfully,

"T. F. RODENBOUGH,

"Brigadier-General, U. S. A., Secretary."

The flag of the Eighteenth Alabama is dear to many survivors of the war between the States who are privileged by the magnanimity of their erstwhile enemy's sons to gaze upon it this late in the age. The flag was raised at Auburn in September, 1861, and mustered out in Meridian, Miss., May 4, 1865.

The regiment, from a purely military standpoint, had a varied experience in the question of commanders. It was commanded at different times by four colonels. The first was Colonel E. C. Bullock, of Barbour County, who died in the service of the Confederacy. Colonel Bullock's name is well known in Alabama history. A fine oil portrait of Colonel Bullock, recently contributed, now hangs in the gallery of the Historical Department at the capitol.

The second colonel of the regiment, the successor of Colonel Bullock, was Colonel Eli S. Shorter, also of Barbour County. Governor Shorter of Alabama was a brother of the second colonel of the Eighteenth regiment.

Upon Colonel Shorter's retirement from the colonelcy of the Eighteenth, Colonel James T. Holtzclaw, of Montgomery, succeeded in command. Colonel Holtzclaw died at a comparatively recent date. The command finally fell to Colonel P. F. Hunley, of Shelby, who originally mustered the men out. His accession was due to the promotion of Colonel Holtzclaw to the rank of brigadier general.

By request of Director Owen, Dr. E. W. Jones, a Jefferson County editor, is preparing a history of the Eighteenth Alabama

to be presented to the department to accompany the flag. Dr. Jones is now running the narrative in serial form in his paper, *The Jones Valley Times*.

The regiment, briefly stated, was composed of companies from the counties of Coffee, Coosa, Covington, Butler, Pike, Tuscaloosa, Talladega, Shelby and Jefferson. Jefferson County furnished two companies. * * * *

**Accessions
to the
Museum.**

Since the publication of the last number of the JOURNAL, a number of contributions or loans to the Museum of the Institution have been received, as follows:

From COLONEL E. E. DRAVO, Sub. Dept. U. S. A. (contribution) (1) rifle, (2) carbine, (3) spark arrester, (4) insurgent's sounder. These were all captured from the insurgents at San Mateo, Luzon, P. I., December 19, 1899 ("Lawton's Last Fight").

From COLONEL E. E. BRITTON, N. G. N. Y. (contribution): (1) Filipino Battle-flag (captured by Major Cook's battalion, Thirteenth Infantry, at Mavitac, Laguna Province, P. I., September 17, 1900. (Lieutenants Mitchell and Cooper were killed in this action.) (2) Form of Receipt (Forced Loan, Filipino Revolutionary Government), (3) Commission (issued by Aguinaldo to Gregorio Ramos).

From JOSEPH S. RODENBOUGH, Esq., Easton, Pa. (loan) (1) Large framed copy of Ehninger's drawing of General Grant driving the trotting horse "Dexter."

**Amendments
to the
Constitution.**

With a view to renew the Articles of Incorporation of the Institution, certain additions to or changes in the phraseology of the Constitution, in accordance with legal usage, have been submitted to the membership. No change in present location nor extension of the control of the Institution is contemplated by these amendments. A large number of votes have been cast, and the result will be made known at the next General Meeting.

**Essays
received
by
Secretary**

The following essays have been received by the Secretary in competition for prizes:

Gold Medal. Essay submitted, signed "LOYAL, 21."

Seaman Prize. Essays submitted, (3) signed "JOHN GRANT, 19," "PRECEPTOR, 13," "FANTASSIN, 42."



Journal
of the
Military
Service
Institution
1878
—
1905

Governor's
Island
N. Y. H.

THE JOURNAL

JANUARY-FEBRUARY, 1906



OME of the papers approved for early publication in this JOURNAL.

- I. "HOW FAR DOES DEMOCRACY AFFECT THE ORGANIZATION AND DISCIPLINE OF OUR ARMIES, AND HOW CAN ITS INFLUENCE BE MOST EFFECTUALLY UTILIZED?"—(The Seaman Prize Essay for 1905.)
- II. "SOME THEORIES ON MARTIAL LAW ELUCIDATED FOR THE STUDENT."—By Brigadier-General J. W. Clous, U. S. A.
- III. "A WINTER WITH THE RUSSIANS IN MANCHURIA."—By Colonel V. Havard, Medical Department.
- IV. "VENTILATION OF MAGAZINES."—By Lieut. C. D. Winn, Artillery Corps.
- V. "MANEUVERS IN THE SWISS ARMY." Trans.—By Lieut.-Col. A. C. Sharpe, 30th Infantry.
- VI. "ELECTRICITY IN MORTAR CONTROL AND COMMUNICATION."—By Lieut. R. Davis, Artillery Corps.
- VII. "EMPLOYMENT OF PHILIPPINE SCOUTS IN WAR."—By Major W. H. Johnston, Philippine Scouts.
- VIII. "NAPOLEON IN ITALY."—By Col. R. W. Leonard, (late) 12th N. Y. Volunteers.
- IX. "THE TORPEDO FOR COAST DEFENSE."—By Capt. F. A. Wilcox, Adjutant 30th Infantry.
- X. "TYPES AND TRADITIONS OF THE OLD ARMY."
(1) "The Return of the Captains, 1905," an episode of the Gettysburg Battlefield.—By Col. W. H. Harrison (formerly Capt. 2d U. S. Cavalry). (2) "Extracts from the Military Journal of the late Brigadier-General Zenas R. Bliss, U. S. Army, 1860-65."

THE PUBLICATION COMMITTEE invites contributions of original papers, translations and comments upon current topics. Attention is called to "Gold Medal," "Seaman," "Short Paper," and "Santiago" prizes described elsewhere.

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Initiation fee and dues for first year \$2.50; the same amount annually for five years subsequently. After that two dollars per year. This includes the Journal. Life membership \$50.

NOTE.—Checks and Money Orders should be drawn to order of, and addressed to, "The Treasurer Military Service Institution," Governor's Island, New York City. Yearly dues include Journal.

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Annual Prizes, 1905

(For Rules governing awards, see January, March or May numbers.)

Gold and Silver Medals

First Prize—Gold Medal, \$100 and Life Membership.

Second Prize—Silver Medal, \$50 and Honorable Mention.

Subject: "The Enlisted Man's Contract with the Government; The Mutual Obligation it Imposes and How Its Violation May Best Be Avoided."
(Essays due Jan. 1, 1906.)

The Seaman Prize

First Prize—One Hundred Dollars in Gold.

Subject: "How Far Does Democracy Affect the Organization and Discipline of Our Armies, and How Can Its Influence be Most Effectually Utilized." (Essays due Nov. 1, 1905.)

Second Prize—Fifty Dollars.

Subject: "Military Hygiene, and How Can the People of the United States Be Educated to Appreciate Its Necessity?" (Essays due Nov. 1, 1906.)

The Santiago Prize

Prize—Fifty Dollars.

Subject: "For the Best Original Article Upon Matters Tending to Increase the Efficiency of the Individual Soldier, the Squad, Company, Troop or Battery, Published in The Journal of The Military Service Institution During Twelve Months." (Ending Dec. 1, 1905.)

Short Paper Prizes

Prizes—Fifty Dollars and Certificate of Award.

Subjects: Best Essay on Matters Directly Affecting the Infantry ("Hancock"), Cavalry ("Buford"), Artillery ("Hunt") and the General Service ("Fry"), Respectively, Published in the Journal During a Twelvemonth.

Announcement

Back Numbers of the Journal

Copies of Numbers 1, 2, 3, 4, 5, 11, 15, 21, 50, 69, 71, 79, 93, 98, 99, 117, 119 and 126 of the JOURNAL OF THE MILITARY SERVICE INSTITUTION OF THE UNITED STATES may be disposed of at a premium by communicating with the Secretary, M. S. I., Governor's Island, N. Y.

Publisher's Department.

HEINZ LUXURIES.

On the banks of the Allegheny, North Side, Pittsburg, stands the largest manufacturing plant of its kind in the world. This group of modern buildings is devoted to the preparation of Heinz "57 Varieties" of food products and the doors of the establishment swing always open to those who may be interested enough to come. Thousands take advantage of the opportunity thus afforded every year. The fact is impressed upon every visitor that this open-door policy is a guaranty, not only to them who have the privilege of going through the plant and seeing how clean and neat the Heinz model kitchens are, but also to the many thousands who never have the same opportunity.

Another thought which occurs to the visitor is that many thousands of families must have outgrown the venerable custom of putting up their own preserves, pickles, fruit-butters and jellies, baking their own beans, toiling over their own mince-meat—that endless task—and doing dozens of things which once made kitchen work so burdensome. If not, where could all these immense quantities of appetizing good things go which they have seen being prepared?

The size of the Heinz plant is considered by H. J. Heinz Co. themselves as only an incident. Before they prepared many food products by the ton, they prepared a few products well—quality first, quantity next. This has been the plan from the beginning. That is the secret of the standing which Heinz products have attained, and it is a very thoughtless person who does not carry away a very wholesome lesson after a visit to the famous home of the "57."

* * *

Extract from Editorial of the New England Medical Monthly for August, 1905.

In response to a number of inquiries which have reached us from our readers as to the composition of Liquozone, we will say that the vaunted cure-all properties of Liquozone are a snare and a delusion.

All the analyses which have been made of that nostrum by leading chemists show that it is nothing else but a concoction of sulphurous acid, oil of vitriol and Chicago water.

It is rather amazing to read the advertisements of the Liquid Ozone Company as they appeared in dailies during the fall of 1903.

For instance, we have before us a copy of the *New York American-Journal*, dated October 18th, 1903, where the Chicago "gentleman of high standing" and "absolute integrity" advertises their universal panacea as follows:

We Will Buy

a 50-cent bottle of Liquozone and give it to you to try. Liquozone—liquid oxygen—is the only product that can kill germs in the body without killing you. * * *

Then they go on with the following sub-heading:

Just Oxygen

Liquozone is simply liquid oxygen—no drugs, no alcohol in it.

What was their object in making such false statements?

Their object was evidently to convey the idea that Liquozone is similar to a legitimate preparation, sold under the name of Hydrozone, which really owes its antiseptic and healing properties to the immense amount of available nascent oxygen (near to the condition of ozone) which it contains.

In addition to this, the name "Liquozone" is confusing druggists and

even doctors with another legitimate preparation, "Glycozone," to such an extent, that in March last the editor of the *NEW ENGLAND MEDICAL MONTHLY* called at a drug store in Mount Clemens, Mich., asking for a bottle of Glycozone, when the clerk turned around and supplied him with a bottle of Liquozone.

Upon my remark that I did not ask for a bottle of Liquozone but for a bottle of Glycozone, spelling the name at the same time, he apologized, stating that he understood that I wanted a bottle of Liquozone.

This instance shows plainly that the confusion which has been created not only on account of the fallacious claims but also on account of the sounding of the two names "Liquozone" and "Glycozone," which is practically the same, is misleading to the limit. There is no doubt that many doctors have allowed themselves to be mystified until some medical journals and analytical chemists made public the constituents of this nostrum.

Thousands of unsophisticated people have been the victims of their ignorance and it appeals to us that if our different Boards of Health, including our National Board of Health, were investigating the Liquozone Company in the same manner as the San Francisco Board of Health did in June, it would be the means of protecting the public in the most effective manner.

The following official report from San Francisco Board of Health will very likely be read with interest:

To the Honorable Commissioners of Health, City and County of San Francisco.

San Francisco, Cal.,

June 14, 1905.

GENTLEMEN: I have the honor to submit a partial report on the work of our laboratories relating to pure food, pure drugs, etc.

* * * * *

I submit appended report from the laboratory respecting the analysis of "Liquozone," an advertised nostrum purporting to be an agent in which free oxygen and ozone are generated, and recommended for all of the ills which human flesh is heir to. This subject had been taken up extensively in the larger Eastern cities and in England, and the analysis from our laboratory is in harmony with the analysis made by the chemists of the laboratories in the various cities where this particular subject has been investigated. Liquozone contains no free oxygen or ozone, but is a mixture of acidulated water. Water constitutes 98.69 per 100, while the acids used are sulphuric acid and sulphurous acid in proportions of .9684 per cent. of the former and .2016 per cent. of the latter. It also contains traces of formaldehyde. Its use, therefore, as in internal medicament, is prejudicial to the individual health, and its use to any extent in a community, in the same manner, is prejudicial to the public health.

I therefore recommend that it be condemned by the Commissioners of Health, as a pernicious and unsafe drug. It may be used as a disinfectant for drains, urinals, stables, etc., and probably no objection could be urged against its external use by an individual to exterminate barber's itch.

I therefore recommend that the same action be taken in respect to this deleterious drug as is prosecuted by your Honorable Commission in the case of impure foods, viz.: that the Police Department and our Department act conjointly to have it removed from the shelves of all dealers handling this drug, and that the selling, exposing for sale or giving away of Liquozone, in the City and County of San Francisco, constitute an offense, the violation of which will be followed by arrest of the offenders.

Respectfully submitted,

D. F. RAGAN, M. D.,
Health Officer.

Dr. D. F. Ragan, Health Officer of San Francisco Board of Health, deserves the warmest congratulations from the San Francisco people for

his action and it is really desirable that all other Boards of Health of the United States should follow his example in investigating the Liquozone wonderful cure-all for the good of millions of helpless sick people.

According to some information received from San Francisco, it appears that Dr. Ragan is fearlessly investigating the food products and patent medicines and we simply wish that he will meet with the success that he so well deserves.

* * *

THE TYPEWRITER AT THE PEACE CONFERENCE.

The typewriter played a conspicuous part in the Peace Conference at Portsmouth. Six Remington Typewriters, with Russian, French and English keyboards, were in constant use by the Russian and Japanese plenipotentiaries and the final draft of the treaty for engrossing was prepared on these machines. This recalls the fact that the Articles of Peace between Spain and the United States and between the British and the Boers were also written on the Remington.

* * *

THE PRUDENTIAL SECURES SOME BRITISH TERRITORY.

Rock of Gibraltar Arrives at the Insurance Company's Home Office.

The Prudential Insurance Company of America, well known for its world-famed trade-mark, "The Prudential Has the Strength of Gibraltar," has just received, at its Home Office, in Newark, N. J., a great slice of the rock from the famous English fortress on the Mediterranean.

By arrangement with the American consul at Gibraltar, R. L. Sprague, this rock was quarried from the parent rock and forwarded to America on the North German Lloyd steamer "Koenig Albert," with certificate from the Admiralty Contractor at Gibraltar to prove its authenticity. Photographs showing the place from which the rock was cut out from Gibraltar have also been received by The Prudential.

The employees of The Prudential have a feeling of sentiment for the Rock of Gibraltar, the use of which as a trade-mark they feel has been largely instrumental in bringing about, through good advertising, increased popularity for The Prudential, and a public appreciation of the Scope and Strength of the Company, resulting from its progressive, and at the same time, Conservative administration.

The Prudential selected Gibraltar as its trade-mark because of the great and renowned strength of that famous fortress. The rock which came to America is of grayish-white limestone of such an unusually dense and compact mass, and offering such difficulties to the stone-cutter, that the judgment of the Prudential officials in selecting Gibraltar as a trade-mark is well verified.

The English authorities at Gibraltar readily gave their consent to sending the Rock to The Prudential, and the only cost involved was that covering the shipment. Small portions of the rock will be sent out as souvenirs to certain of the Company's employees.

"THE STANDARD OF THE WORLD."

Highest Awards, Centennial, 1876.
Highest Awards, World's Fair, 1893.



HARNESS DRESSING.



HARNESS SOAP

Unrivalled for cleaning and softening the leather. This soap is absolutely pure.



HARNESS OIL

Preserves and softens the leather, consequently adds life. Compounded with pure neatsfoot oil.

THE LUXURY OF HEINZ MINCE MEAT

Heinz Mince Meat is mince meat idealized—the good old-fashioned kind made perfect by modern methods. It has marked a new epoch in mince-pie making—a new phase to mince-pie goodness.

In the preparation of Heinz Mince Meat the best of everything is used. Picture choice, fresh meat selected from the country's best output; rich, white suet; large, juicy, faultless apples; Four-Crown Valencia confection raisins, carefully seeded; plump Grecian currants of exceptional flavor, each one thoroughly cleansed and purified; rich candied citron, orange and lemon peel; pure spices, ground in Heinz kitchens—imagine all these blended with utmost care and precision, in cleanly surroundings, and you have an idea of what Heinz Mince Meat really is—why it is different from any other, why it is better, better, **BETTER**.

Cleanliness is perhaps the most important consideration in the preparation of an article like mince-meat, and Heinz cleanliness has become a household word.

Anything That's
HEINZ
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